The Orchadian

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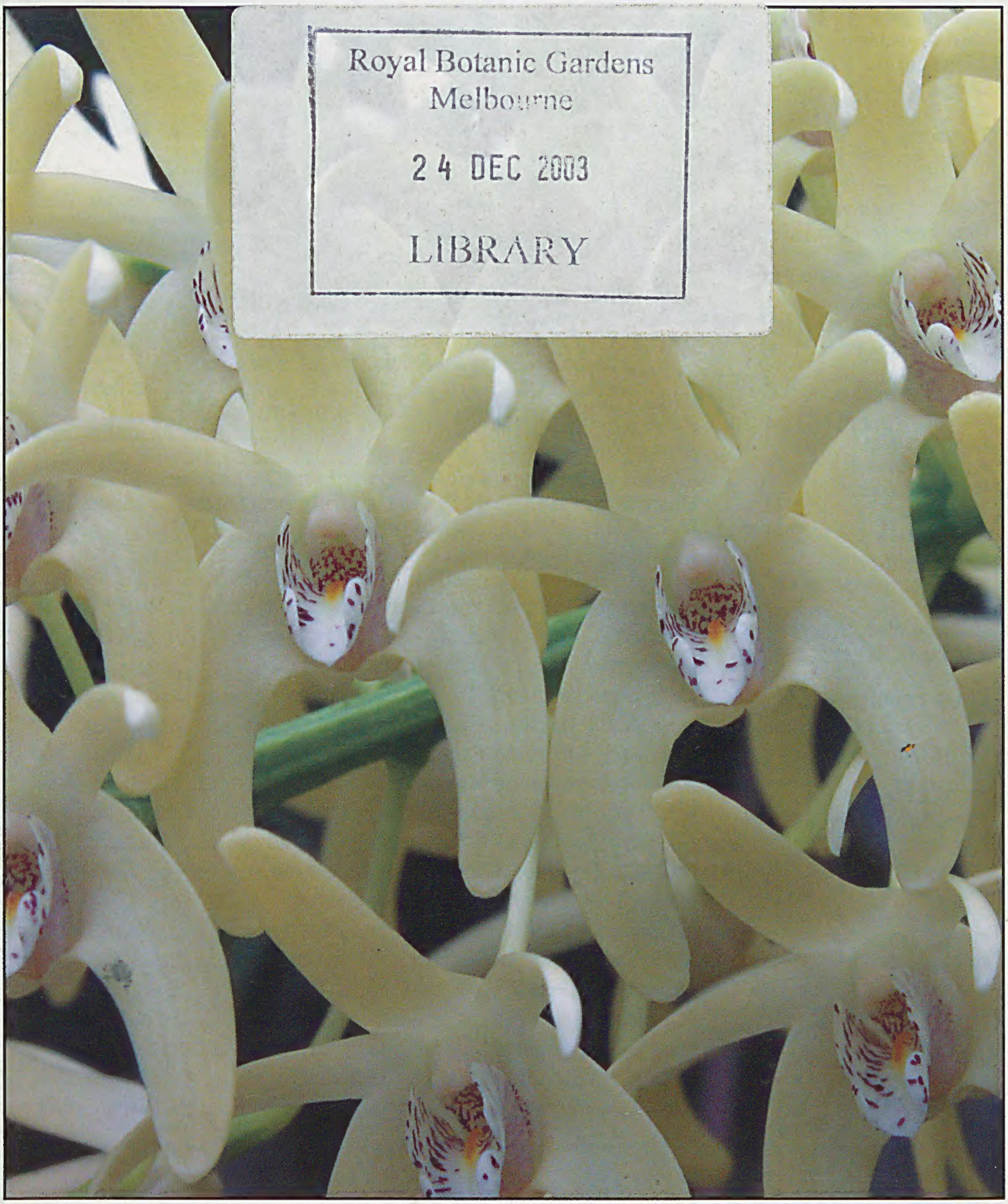
Official Journal of the Australasian Native Orchid Society



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Dendrobium speciosum var. *curvicaule* 'Ted' AM/AOC Photo Bill Dobson

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The Orchadian

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Pterostylis saxicola

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Speakers

Speaker	**Subject**
James Indsto	Diuris pollination
John Woolf	
David P Banks	Contemporary Australasian Orchid Literature
Geoff Stocker	Papua New Guinea Orchids
Kevin Western	Conservation Etc
Peter McCaulay	Native Orchid Conservation through the use of aseptica symbiotic techniques
Ray Clement	Introduction to Australian Native Orchids
Gary Yong Gee	Taxonomy
Ron Parsons	American View on Australian Native Orchids
Phil Spence	Australasian Hybrids with a future
Michael Harrison	Twig Epiphytes

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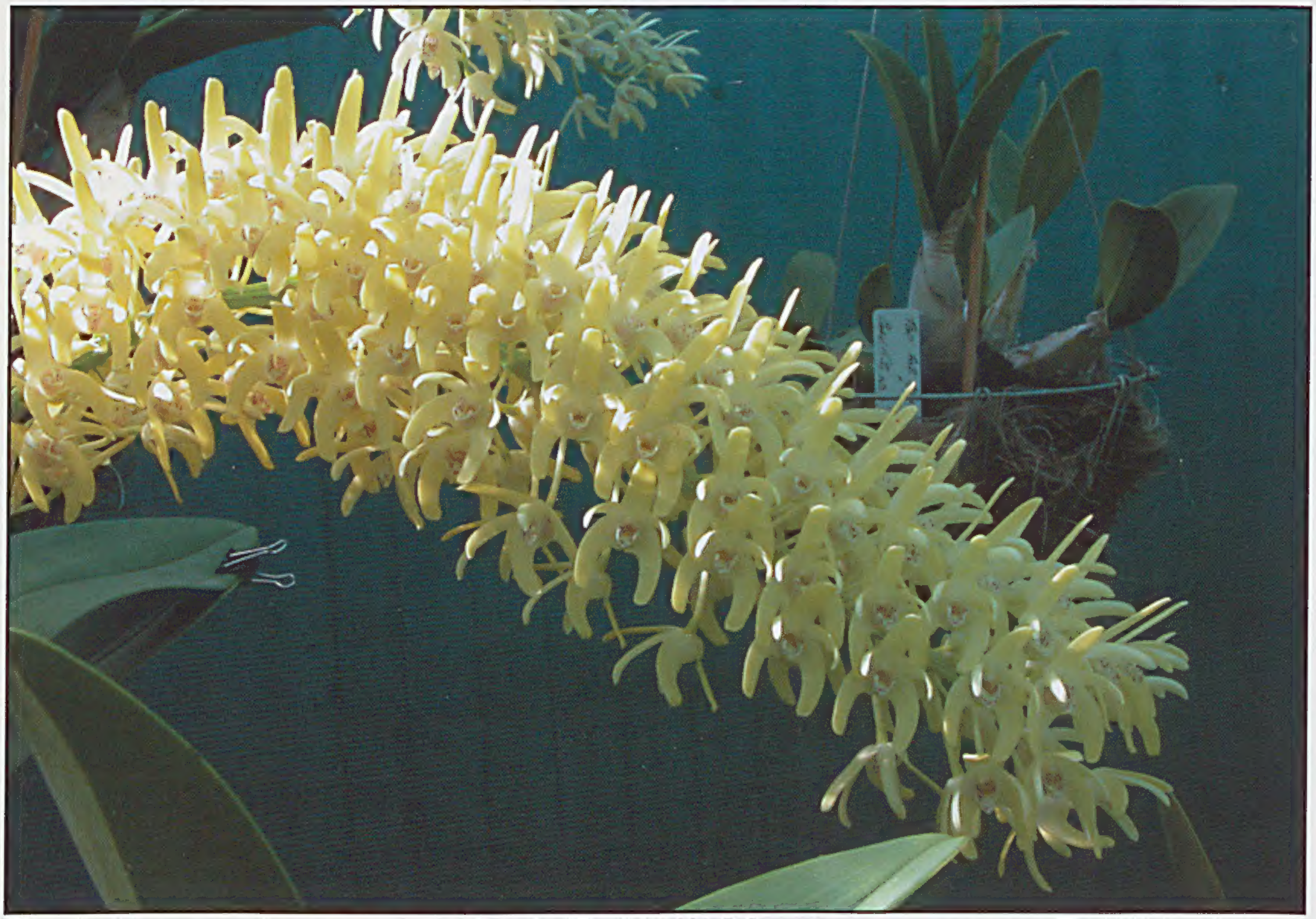
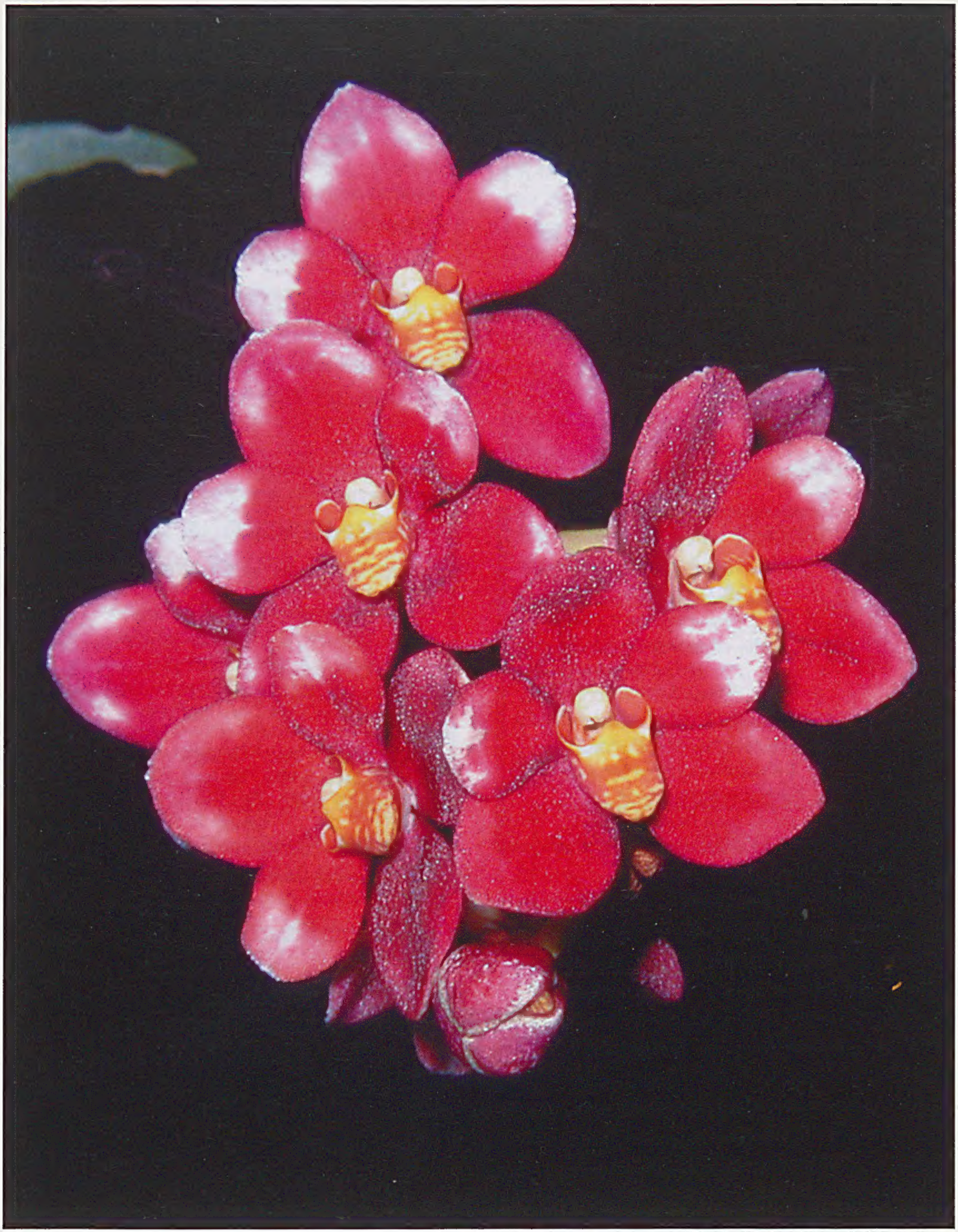
Ted Walmsley among the orchids at the show. Photos Bill Dobson



Dendrobium speciosum var. *curvicaule* 'Ted' AM/AOC. grower Ted Walmsley.



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Sarcochilus Duno Nickys Twin 'Voodoo'.

Grand Champion at the Port Hacking Sarcanthinae Show 2003.
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Editorial.

I have finally finished this issue, no thanks to the number of orchid shows that have been held over the past two or three months and of course there was the Rugby World Cup as well. This is probably the reason I was not able to get a Group to do an article for 'What the Groups are Doing' too.

In late August many growers headed to Kempsey for the weekend to view the show held by Winsome and Ted Walmsley. This will soon become a must for those who have an interest in *Dendrobium speciosum*. Then all through September spring shows were held each weekend, with Sarcanthinae Shows following in October and later in the southern states. In between all this many of us try to get into the bush to see orchids which are at their peak this time of year.

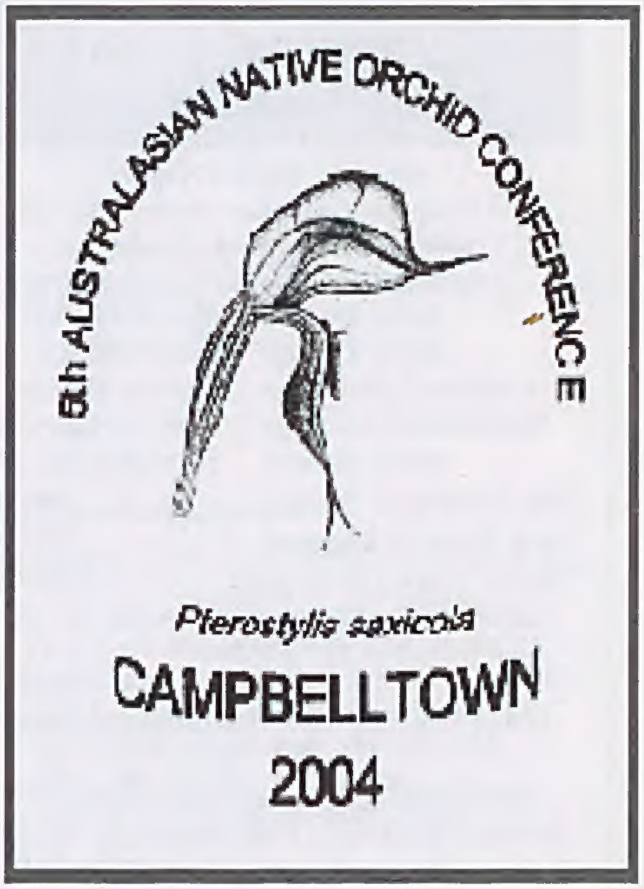
In this issue we see some great photos of the Show at Kempsey which were taken by Bill Dobson, an article by Phil Ritchie of Victoria on culture and growing media used by some growers. Dean Rouse has found *Diuris pedunculata* in Victoria and put together a paper on the history of this orchid and some closely related species. Mike Harrison has a similar article on *Dendrobium* Hilda Poxon, with some great photos and Roslyn Capell on *Dendrobium* Gerald McCraith. Ruth Rudkin gives a short story, on her visit to Port Lincoln. Frank Vernon has a say on Sarcochilus hybrids growing in Western Australia and Linda Rogan has part two of her wonderful trip to the same state, and we finish off with a newly name species from David Jones, *Prasophyllum hygrophilum*.

The March 2004 issue will have an article from Bill Lavarack on an area in North Queensland. The New South Wales Judges course will have finished and I hope to get some of the papers submitted by the students who went through the course.

After many years posting out *The Orchadian*, John Riley and his small band of helpers have retired from the job. On behalf of the Council and all members I would like to thank John for the amount of time and the work involved in posting out our journal, which he has given over many years. This job will now be done by Chris and Rona Wareing of Illawarra Group. We also have a new Membership Officer, Bill Dobson, who will keep records of our address and membership status, so if you find any corrections that need amending to your mailing address inform Bill via our Post Office Box address. This will help make things easier at posting time as Bill also prints out the labels for posting.

I wish you all the best for the Christmas and New Year break and hope you all have a successful year in 2004.

Peter Eygelshoven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Visitors to the Kempsey Show enjoy an evening at the local club.

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Some thoughts on epiphyte culture and growing media.

Phil Ritchie
May 2003

1. Introduction

Since my return to ANOS (in any active sense) a couple of years ago, I was fascinated by the disagreement amongst epiphyte growers on a number of matters. The following issues divided those I spoke to: media (particularly the use of charcoal and highly absorbent media such as Absorba Stone®), mounts (although less disagreement on this one), and frequency of watering/fertilising. The issues on which people seemed to agree were the need for light, good drainage and interestingly the need for fertiliser. Practice, however, differed widely on whether people watered before fertilising or whether the fertiliser was applied with the water. All agreed on keeping water up in summer and keeping water down in winter, but there were some wide limits here! To try to shed some light on all of this I spoke to a number of well known and very proficient growers; asking a number of standard questions. Finally, I carried out water uptake measurements using some common media both with and without the use of a surfactant (in this case a commercial dish washing detergent).

2. Conclusions

The answers to the brief range of questions were interesting and illuminating.

Squat pots now seem to be the preferred choice by Melbourne growers with just straight bark (coarse grades for *Dendrobium speciosum* and medium grades for *Dendrobium* hybrids) being judged as satisfactory by many.

The use of charcoal as a growing medium attracted a wide range of responses from very positive to very negative. Those who dislike it have been found to be growers who fertilise and water together in one step. Those who like it a great deal fertilise after watering.

Growers are now much more inclined to withhold water for longer periods during the colder months.

High potassium fertilisers are increasing in popularity with those who still use higher nitrogen fertilisers generally confining their use to the first half of the growing season.

Finally, I stress that I did not systematically cover a range of other questions such as humidity, air movement, plant positioning and sprays to name a few. However, I hope others will follow with their views and experiences to start some sharing of our "cultural" experiences.

3. Experimental

3.1 Discussions with growers

I spoke to twelve well known Melbourne growers on their culture of *Dendrobium speciosum* in particular, then on their cultivation of a typical (if there is such a thing) *Dendrobium* hybrid. I cited *Dendrobium* X *delicatum* as the "typical" case. For typical mounted plants I suggested people think of *Dockrillia linguiformis* and *Dockrillia striolata.* This may have been a mistake, but I felt I wanted something for people to focus on. Finally, I spoke to two (2) very well known northern NSW growers. The questions I asked related to:

Type of pot, potting mix and media size, type of mount.

What mixes wouldn't you use and why.

Watering and fertilising in both summer and

winter (eg water before fertilising or water and fertilise at the same time).
Fertiliser type.

Location and lighting conditions.

What disasters people had and what they would like to do better.

The Melbourne growers I spoke to were: Phil and Denise Colquoun, George Dimos, Jim Doney, John Evans, Murray Harding, Stan Harper, Stan Hill, Jim Laurent, Doug Lee, Tony Slater, Alex Wild and Eric Wilde. The NSW growers I spoke to were: Tony Blewitt and Ted Walmsley (both in the Kempsey area).

3.2 Water Absorption Measurements

For these, I used a 150 mm diameter Port Pot® (depth 100 mm) manufactured by PMIM (Product Code 065-811735). This I filled with one of the following four types of dry media in turn (all nominally 20 mm). All media were wet sieved to remove the fines and dried in full sunlight over three days (early April) and under shelter for another seven days. The amount of media used was enough to fill the pot when the pot was tapped on the ground to ensure good packing.

The media used were:

Charcoal (Attunga 'Black Magic®' Horticultural Charcoal sorted to retain the 20 mm fraction).

Orchid Bark Nuggets® – Large (20mm) (Aus Gro).

Absorba Stone® (20 mm, ex B&T Ferns and Orchids nursery)

Hard scoria (red volcanic rock) 20 mm.

Ceramic spheres (20 mm perfect zirconia spheres; fired to have a non-absorbent glass like surface manufactured by Nikkato Corp Japan, sold through Tosoh Corp Japan through local agents CI Ceramics (Aust) Pty Ltd).

The ceramic spheres were used so that the water uptake by these could be subtracted from that taken up by the other media. The difference would approximately represent what was taken up by surface irregularity and surface capillaries/channels in the media i.e. the amount absorbed.

Having filled the pot with the media, a circular piece of shadecloth was placed over the top and held in place with a rubber band. The pot was then weighed (weighing 1) and then immersed for 30 sec in water (weighing 2) and then subsequently for 4.5 min (weighing 3). During immersion the pot was gently agitated to dislodge any trapped air. A two minute draining time was allowed after each immersion, the pot being then dried with paper towel and then weighed. The third weighing was obviously a total immersion time of 5 min.

The above was then repeated (using the same media, but redried) using surfactant and water (Morning Fresh Original® Super Strength dishwashing detergent by Cussons Pty Ltd., Dandenong Vic) and water. The ratio used was one teaspoon (5 mL) to 9L of water. Using the measured density of the detergent (1.079 g/mL) this equates to a concentration of 0.06 wt-% of detergent (surfactant) in the water. I did this to check the proposition that dry bark is difficult to wet with straight water.

4. Results

4.1 Interviews with growers

Two thirds (8) of all the Victorian growers pot in the squat pots. Both of the northern NSW growers used standard pots. There was a clear preference for squat pots in Melbourne's cooler climate. Only three growers crocked their pots, but all three used the standard dimension pots. These growers crocked with styrofoam.

Table 1 below summarises the media which people used. Essentially the same potting mix was used for hybrids such as *Dendrobium* X *delicatum* as with *D. speciosum,* except that with the hybrids/smaller plants it was finer (ca 10mm). Table 2 summarises the responses for mounted plants.

Table 1 Media for *Dendrobium speciosum*

Potting Mix	**Number of people who use**
Coarse bark only (15-30 mm)	6
Coarse bark & coarse styrofoam	1
Coarse bark & a little broken brick	1
Coarse bark (8): coarse charcoal (1): coarse rocks/ scoria (1)	3
Coarse Absorba Stone® or similar (3.3): coarse bark (3.3): half wine corks (3.3)	1
Coarse bark (4): coarse styrofoam (5): coarse Absorba Stone (1)	1
Coarse bark (7): Absorba Stone® or similar(3)	1

Table 2 Substrates for Mounted Plants

Mount	**Number of people who use***
Rock	1 or 2
Cork	7
Tree Fern:	
Brown (Dicksonia)	3
Black (Cyathea)	2
Hardwood	2
Branch pieces/native woods (Callistemon, Melaleuca or Casuarina)	2
Terracotta	1
On top of basket of bark	1

*Adds up to more than fourteen because some use more than one type of substrate.

Watering and fertilising was a large subject which I've attempted to summarise in Table 3 below.

Table 3 Watering and Fertilising

	Summer		**Winter**
Frequency of watering?	5 (1/1-2 days)*; 5(2/wk)*; 3(1/wk)		2(1/ wk)*; 4(1/ 1-2wks); 2(1/ 2-3wks); 5(1/3-6wks); 1(Mist only)
Water am or pm?	am: 3	pm: 3	am: 6
Water before or during fertilising?	5 (before)	6 (during)	No-one deliberately fertilised during winter.
Frequency of fertilising?	1(1/2 days); 4(1/2wks); 1(1/2-3wks); 2(1/4wks); 1(1/6wks)		No-one deliberately fertilised during winter
Occasional use of lime or limewater	At least 3 used lime and at least 1 used limewater		No use during winter

* 5(1/1-2 days) = Five growers said they watered once per one to two days. 2(1/wk) = Two growers said they watered once per week, etc. Numbers do not always approximate fourteen as I did not get responses from all growers.

Concerning disasters and what went wrong, overwhelmingly people's comments related to media. Three did not like Absorba Stone® having lost plants or having achieved poor root systems/poor growth. One did not like charcoal having found it led to dead roots if the mix was older than three years. One person had a negative experience with peat moss on the same basis. Most people felt that they would like to get more light (Melbourne growers here) and to get the perfect air movement and the right watering for every plant in a mixed collection.

Concerning fertilisers used, the following is a list of what people said (not absolutely complete):

Cultisol® high K (locally available in Geelong)
Osmocote® slow release
Peter's Excel®
Bill Johnston's fertiliser (Glenwood Orchids)
Aquasol® or Maxicrop® up to December then Peter's Excel to end March
Chicken manure
Horse manure
Peter's High N® or Vital® up to December then Phostrogen® or Peter's Excel® to April/May
None. Occasionally Peter's High K® or Maxicrop®
Phostragen® and Charlie Carp® occasionally
Peter's Excel® to early March then Bloom Buster® until the end of May
Nutricote® Black then later Peter's Blossum Booster®
Occasional application of 2g magnesium sulphate (Epsom salts) plus pinch of potassium permanganate (Condy's crystals – for manganese) to 1L of water

4.2 Water Absorption Measurements

Below I have tabulated the water uptake in gram taking off the amount taken up by the ceramic balls (22g) which would approximately represent what would be taken up by assuming all media were smooth and non-absorbent.

Table 4 Water Absorption (g) By Various Media

	Mass of media in Pot (g)	*g water* *No Surfactant*		*g water* *With Surfactant*	
		30sec	5 min	30sec	5 min
Bark	402	57	70	64	93
Charcoal	285	90	110	72	92
Scoria	1033	111	127	88	98
Absorba Stone®	526	298	306	363	379

5. Discussion

Pots:
Clearly most of the Victorian growers favour the squat orchid pots. Not only is there very good drainage from the base of these, but the danger of wet, cold roots in winter would be reduced. On the other hand, frequency of watering would need to be increased a bit during the summer period. Both of the NSW growers liked the conventional pots and to my mind that seems reasonable given the much warmer conditions. All used plastic, although one person confessed to preferring terracotta but didn't because of cost. Virtually no-one crocked their pots. Three people crocked their pots with styrofoam, but then they were people who didn't use the squat pots.

Media:
This was particularly interesting. A variety of mixes are used, but almost half the number just used straight bark. The use of charcoal was one area where there was a wide divergence of views. Some love it (in fact one person said they used it on its own for many years – the availability of good hardwood charcoal now being more difficult so that person went back to bark only). Others hate it, saying that after two or three years it can unpredictably release salts and "poison" roots and upset plants. Yet others were in between; nothing against it, but they saw no benefit. One clear result though was that those who positively disliked charcoal were all people who did not water before fertilising; ie the fertiliser was dosed in with the water or was applied with the water. In this case the water with the fertiliser would "wick" deep into the charcoal capillaries (refer uptake figures in Table 4); it making little difference whether or not surfactant is used to assist this process. However, if one waters first, clearly less fertiliser would get taken up by the charcoal.

The person I spoke to who liked charcoal the most always waters before fertilising. There are some who say this makes no difference; that reverse osmosis means that the situation "at equilibrium" becomes the same. I know that that is not the case from all industrial processes I've been involved with that occur within a timescale. The order (staging) of adding a reversibly absorbed ingredient is critical to the process outcome even though given enough time (outside the process "window") the result would be the same. Put simply, the fertiliser is much more likely to become "enmeshed" in the media if it is applied with the first water. Under these circumstances capillary deposits could well build up over time to be released later when not wanted. Again, the key is the timescale. I personally water before fertilising, but repot after three growing seasons on the grounds if I wait longer the bark becomes degraded thus inhibiting free aeration of the mix. When I do this I find the roots have clung to the charcoal in particular – an observation made by others. Clearly the plants really like the stuff (at least for a period!). If one doesn't water before fertilising, then the charcoal could well take up critical levels of salts before the end of the three growth season repotting cycle leading to problems. I might divide a plant and test this proposition directly. In the meantime my information would say that the epiphyte mix recommended on Page 8 of our '*Cultivation of Native Orchids, 2nd Edition*' is an excellent mix providing you water before fertilising and adhere to good repotting practice (i.e. repot before the bark breaks down toward the base of the pot).

On the use of highly absorbent media (in particular Absorba Stone®), not many like it; it either held too much water leading to poor root growth, took up fertiliser (to release it later when not wanted) or was of too high a pH. Yet another told me of their experience with peat moss causing root rot. The idea of highly absorbent media was not popular and that accords with the trend (as I saw it) of watering less frequently, particularly during the winter months. However, for Sarcochilus (which I didn't direct the thrust of my survey toward) Absorba Stone® can be very good according to some growers.

To round off the story on media, the water uptake figures are interesting but in the main not too surprising. The order of water uptake was:
Absorba Stone >> Scoria/red volcanic rock > Charcoal > Bark. Interestingly though was that when you added surfactant this had the most significant effect for Absorba Stone only (almost 25% greater water uptake – greater

penetration of the fine capillary structure in the rock). However, with the other media, water uptake (at least initial water uptake) was less, if anything. While this seems counter intuitive, the reason I believe is that the surfactant assisted drainage of the water from the media (you can see this when you wash dishes in the sink I think). In short for bark, charcoal and scoria at any rate, use of surfactant does not appear to improve media wetting and water uptake.

Fertilising:
As reported earlier, people more or less split evenly between those who water before fertilising and those who deliver fertiliser with the first water. Other results speak for themselves. Only one person adhered to the view that our epiphytes need little in the way of fertiliser and benefit from only one or two applications during the growing season. All others fertilise much more frequently and once every two weeks during the growing season was the most popular. Increasingly, people are discarding high nitrogen (N) fertilisers (eg Aquasol®) in favour of high potassium (K) fertilisers (eg Phostrogen®) promoting flower development as opposed to vegetative growth. Quite a number favour a high nitrogen or balanced fertiliser up to the end of December or January and a high potassium fertiliser through to around mid May.

Watering:
This most difficult of areas attracted a wide response presumably (and I still see this as something of a cop out) because everyone's conditions are different. However, I'm now beginning to think that there isn't one right answer to this – our orchids are tolerant, and species plants in the wild are themselves subject to a fairly wide range of conditions. One clear trend though is that the old "water once a week in winter" (refer Page 13 of '*Cultivation of Native Orchids', 2nd Edition*) is increasingly a minority view. People now favour cutting back on water more severely at this time of the year; almost half the growers opting for periods between three and six weeks. In fact one grower doesn't water at all – only occasionally misting his plants. Cold, wet feet are really bad for our orchids and if there is some pseudobulb shrinkage then too bad – it's better that than cold, wet feet! Note that this shrinkage reverses itself when watering is resumed in the warmer weather. Summer watering schedules were fairly predictable and a couple of times a week (subject to weather conditions) is a popular position.

Finally, all seem to agree that mornings are best in winter and to pick a warm day. In the summer, views are mixed; some stick to the mornings, others switch to the evenings while the remainder alternate going for mornings in cooler weather and evenings in the hot weather.

Mounted plants:
Almost half the number of growers have a preference for cork. Its advantages are clear: it doesn't degrade, is not attacked by grubs/ wood borers, it is light and serviceable and the surface is nicely irregular allowing the plants to get a firm foothold. It seems clear that the popularity of tree fern may be declining somewhat for some reason. It may be a question of availability, but that doesn't seem right compared to cork. However, perhaps in contrast to the situation of potted plants, no-one seemed to have had any bad experiences with any of the common substrates. Rock was less preferred due to the weight and associated handling issues. Some growers had had negative experiences with sphagnum moss as a root cover in the period when new plants are being established. Bush moss seemed preferred for this purpose as it does not retain water for as long a period.

6. Acknowledgements

My heartfelt thanks to all the growers I spoke to for being so helpful and willing to talk to me about their methods and views. However, any omissions and factual errors are solely my responsibility.

(Reprinted from the ANOS Victorian bulletin)

-oOo-

Discovery of *Diuris pedunculata* R. Br. in Victoria.

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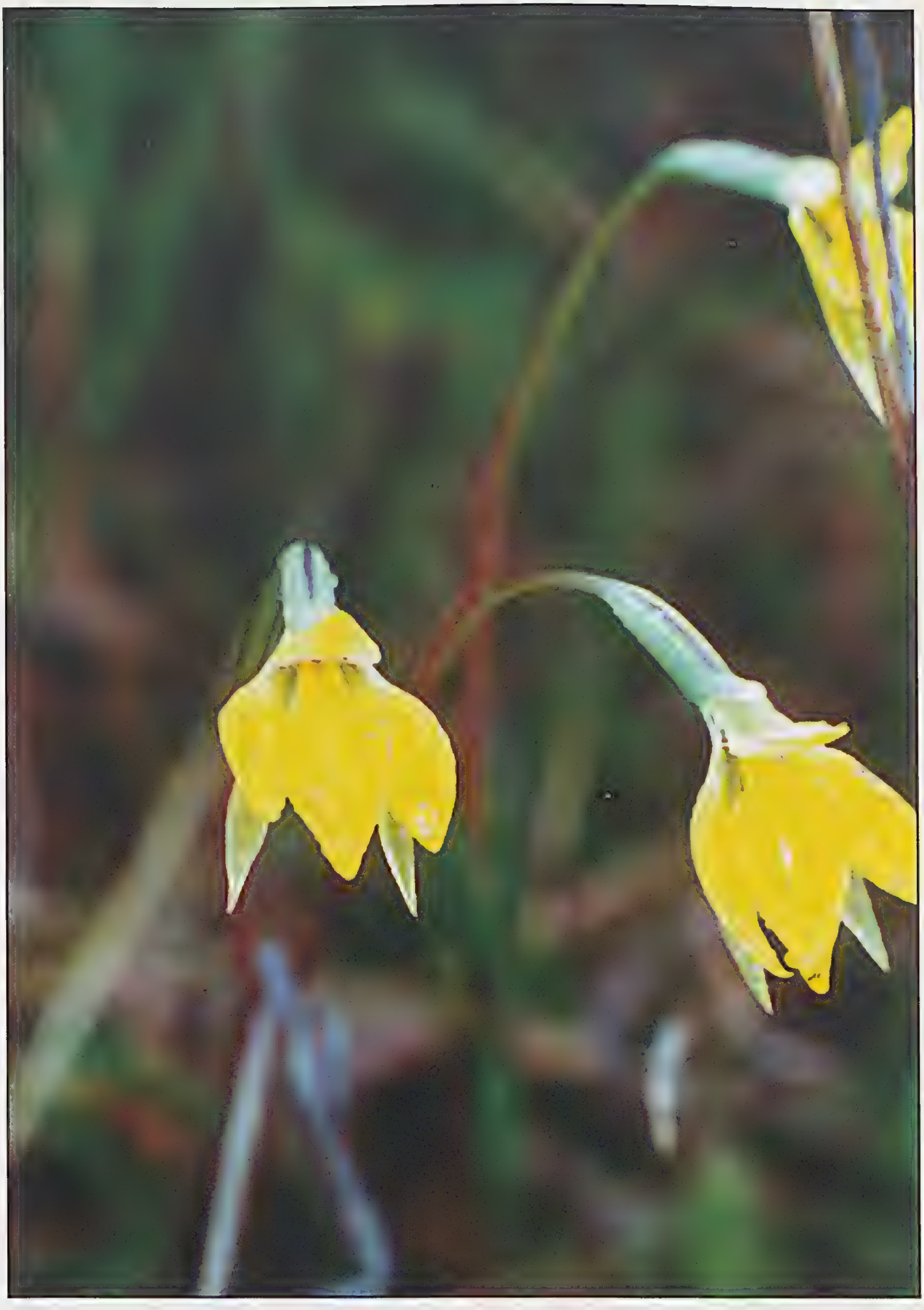
Diuris pedunculata (Orchidaceae) was described by Robert Brown in *Prodr.* 316 (1810) from material he collected near the Hawkesbury River, Sydney, New South Wales, in Sept.-Oct. 1803. It became the first described member of a group of taxa which are commonly known as snake orchids (sometimes golden moths or cowslips).

A second member of this group *D. lanceolata* Lindl. was described by John Lindley in *Gen. sp. orchid. pl.* 508 (1840) from material collected by Ronald Gunn in the vicinity of Circular Head, Tasmania, in November 1837. Soon after a third member *D. behrii* Schldl. was described by Dietrich Franz Leonard von Schlechtendahl in *Linnaea* 20: 572 (1849) from material collected by Hans Herman Behr in September at Kowimanilla, South Australia. George Bentham in his *Flora Australiensis* Vol. 6 (1873) relegated both Lindley's *D. lanceolata* and Schlechtendahl's *D. behrii* to synonyms of Brown's *D. pedunculata* and described a new species *D. pallens* Benth. from material collected by C. Stuart in October from the Tenterfield area of the New England Tablelands, New South Wales.

This treatment by Bentham of the aforementioned species was accepted until the mid-1980s when a review of the type material housed in European herbariums was conducted by M. A. Clements (see Clements, 1989). Examination of the type material revealed that *D. pedunculata, D. lanceolata* and *D. behrii* were distinct species. Furthermore it was found that the *D. pallens* type material was a good match with Brown's *D. pedunculata* type. These findings resulted in the reinstatement of both *D. lanceolata* and *D. behrii* as valid species and the relegation of *D. pallens* to a synonym of *D. pedunculata* (Clements, 1989).

This review resulted in a drastic alteration to the conservation status of *D. pedunculata* which was once perceived to be a widespread common species but was now identified as a highly endangered taxon. *D. pedunculata* (under its synonym *D. pallens*) is listed as endangered by Leigh *et. al.* (1984) and only known from one remnant grassland site near Armidale with old records from Deepwater (1885), Walcha (1894), Gangal (1904), Scone (1907), Bulahdelah (1932), Paterson (1926) and Guyra (1932 and 1935). In the Sydney region the last reliable report of *D. pedunculata* (as *D. pallens*) appears to be from Schofields in the late-1960s (J. Riley pers. comm.). Reports of snake orchids occurring at Werrington and in the vicinity of the Hawkesbury River north-west of Sydney also exist from about this time but it is unclear which species is involved (J. Riley pers. comm.).

In the 1990s *D. pedunculata* was discovered by Marion Garratt (Centre for Plant Biodiversity Research, Canberra) flowering in mid-October along a river valley in Namadgi National Park, ACT. Subsequent surveys showed the species to be fairly common within a localized region of Namadgi NP, growing in open grasslands at an altitude between 700 m and 1000 m (D. Jones pers. comm.). *D. pedunculata* is also known from a few remnant grassland sites on the New England Tablelands, but unfortunately is not conserved at any of



Diuris peduculata, from Wulgulmerang

Photo Dean Rouse

these sites (J. Riley pers. comm.).

The main features distinguishing *D. pedunculata* from other snake orchids includes having one or two small flowers on a short stem, petals held parallel to labellum, short broad lateral sepals, a labellum with the lateral lobes reduced to small triangular teeth, purple column and just two leaves. It favours a wet grassy habitat flowering from August through to October depending on location. In October 2000 I was lucky enough to see a few hundred plants of *D. pedunculata* flowering in open grassland in Namadgi NP, ACT. At this site it grows with a montane form of *Pterostylis cycnocephala* Fitzg. which flowers at about the same time. A couple of weeks later (early-November) Michael Duncan and myself stopped at a remnant wet grassland site on red volcanic soils at about 900m altitude on the Wulgulmerang plateau, Victoria. Here we noticed a patch of small finished Diuris plants growing with finishing plants of *P. cycnocephala*. Closer examination of the finished Diuris plants suggested it was a snake orchid but the flowers and the leaves were too withered to identify which species it was. In Victoria there are currently four described snake orchid species: *D. behrii*, *D. chryseopsis* D. L. Jones, *D. monticola* D. L. Jones and *D. ochroma* D. L. Jones (Jeanes and Backhouse, 2001). As to the identity of the small Diuris plants we had found, a number of these species could be immediately eliminated. While both *D. monticola* and *D. ochroma* occur at similar sites and altitude they both have a much later flowering time, not starting to flower until mid-November. In addition the plants were too small to be *D. behrii,* and well outside its known range. This just left *D. chryseopsis* as the only possibility as far as named Victorian taxa were concerned, though at about 900m altitude it was much higher than I had ever known this species to occur in Victoria. The other possibility *D. pedunculata*, was a far more exciting option, and the site and its vegetation associations were very reminiscent of the Namadgi NP site at which I had seen this species a few weeks earlier. Unfortunately the leaves of the plants were too withered and in amongst tangled mats of dying-off grasses to tell if the plants had the two leaves, characteristic of *D. pedunculata*, or the small tussock of multiple leaves possessed by *D. chryseopsis*. Although neither taxa could be entirely ruled out, by time we had left this site on the Wulgulmerang plateau I had fairly well convinced myself that the finished Diuris plants we had found were likely to be *D. pedunculata*, a species not recorded for Victoria. A day later at a drier grassland site on red loams at about 750m altitude near Benambra, Victoria we came across more finished Diuris plants which we assumed were the same species as we had seen near Wulgulmerang and I resolved to come back next spring to determine the exact identity of both these populations.

In October 2001 I returned to site near Benambra where about thirty Diuris plants were in full flower. They were an interesting montane form of *D. chryseopsis* but not the hoped for *D. pedunculata*. I then proceeded to Wulgulmerang assuming it would be the same Diuris taxa. Upon arrival at the site I quickly realized this was an incorrect assumption as the small Diuris plants here bore no resemblance to the Benambra plants but were identical to *D. pedunculata* plants I had seen the previous year at Namadgi NP. In total I counted forty eight plants of *D. pedunculata* at the Wulgulmerang site growing with about one hundred plants of the same montane form of *P. cycnocephala* as occurs at the Namadgi NP site. Specimens of *D. pedunculata* were taken to the National Herbarium Canberra where the validity of this new Victorian record was confirmed by David Jones.

Unfortunately this new *D. pedunculata* site occurs on remnant roadside native grassland and is threatened by invasion of its habitat by pasture grasses, a process facilitated by the practice of grazing of stock along road verges. Further surveys of the Wulgulmerang region may possibly detect new colonies but the majority of the volcanic grassland sites in this region have a long history of grazing. The *D. pedunculata* plants from Wulgulmerang and Namadgi NP appear to be morphologically very similar to each other, while plants from the New England Tablelands are also very similar morphologically but appear to have a greater degree of venation on the dorsal sepal, and slightly shorter broader lateral sepals with less tapered ends, based on examination of drawings and photos (Nicholls, 1969; Bishop, 1996; Steenbeeke, 2000). However, it's difficult to gauge to what extent photos and drawings of individual plants are representative of a population. Direct comparisons of fresh material from the New England Tablelands populations and the Victorian/ACT populations should enable the determination of whether these populations are all one taxa or closely related sister taxa. Determining whether these montane populations are completely identical to the original *D. pedunculata* collected from low altitude grassy meadows near Sydney may prove more difficult. Unfortunately no extant low altitude population is known so any comparison with the higher altitude populations must involve examination of pressed material, in which important characteristics are often lost making it very difficult to distinguish closely related species. The only way this question can be answered beyond doubt would be for a low altitude *D. pedunculata* population to be rediscovered. Old records exist for the north-western Sydney region, Bulahdelah, Paterson and Scone (altitude will depend on were collected in this region). I've been unable to determine the location of the Gangal record in Leigh *et al.* (1984) the closest name to this I've been able to find is 'Gangat' just east of Gloucester NSW. So for the time being, extant populations of *D. pedunculata* remain known for only two regions in the Southern Australian Alps and a couple of sites in the New England Tablelands making for a very disjunct distribution.

Acknowledgements

I thank Michael Duncan, Jeff Jeanes, David Jones and John Riley for contributing information.

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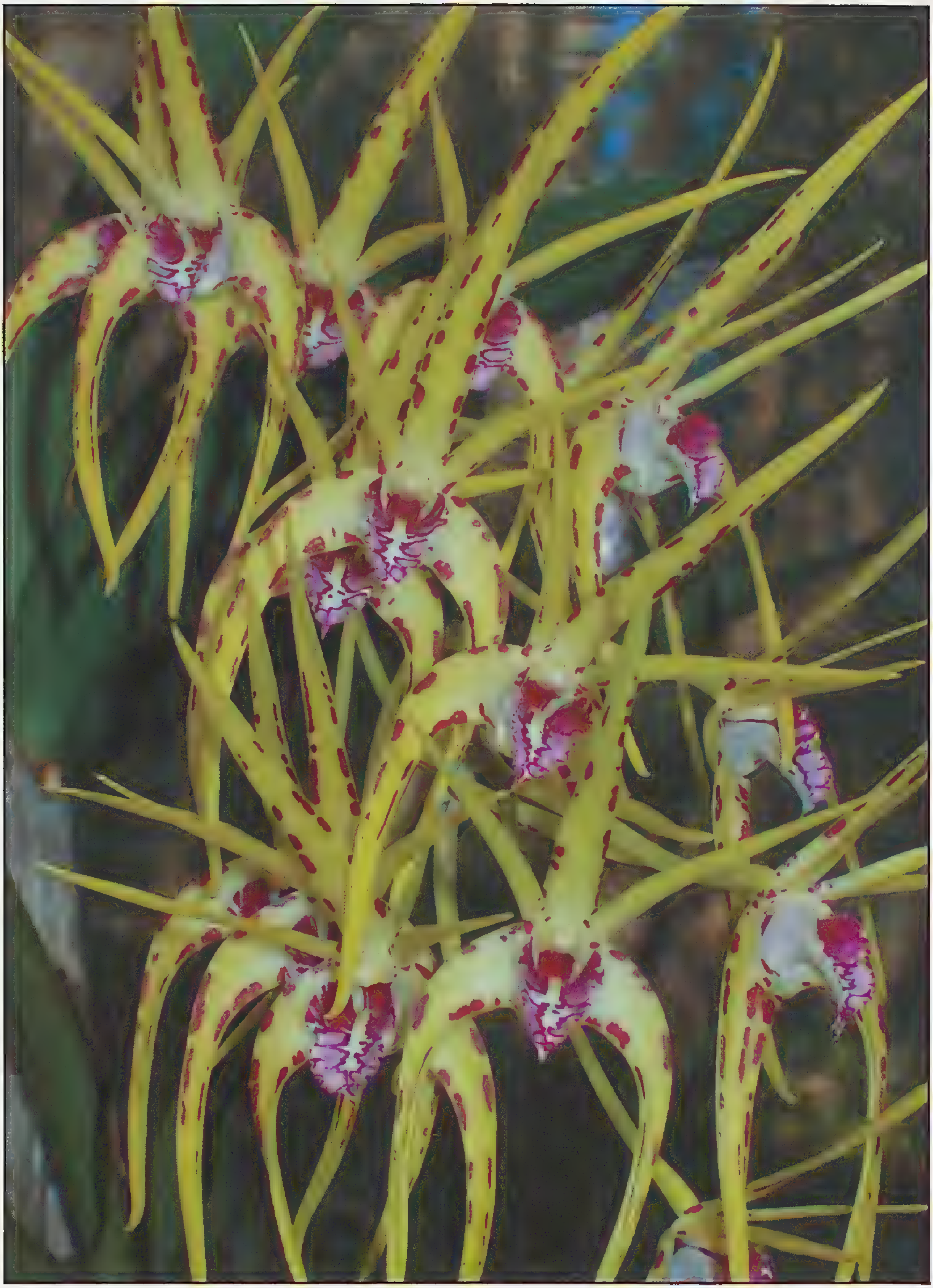
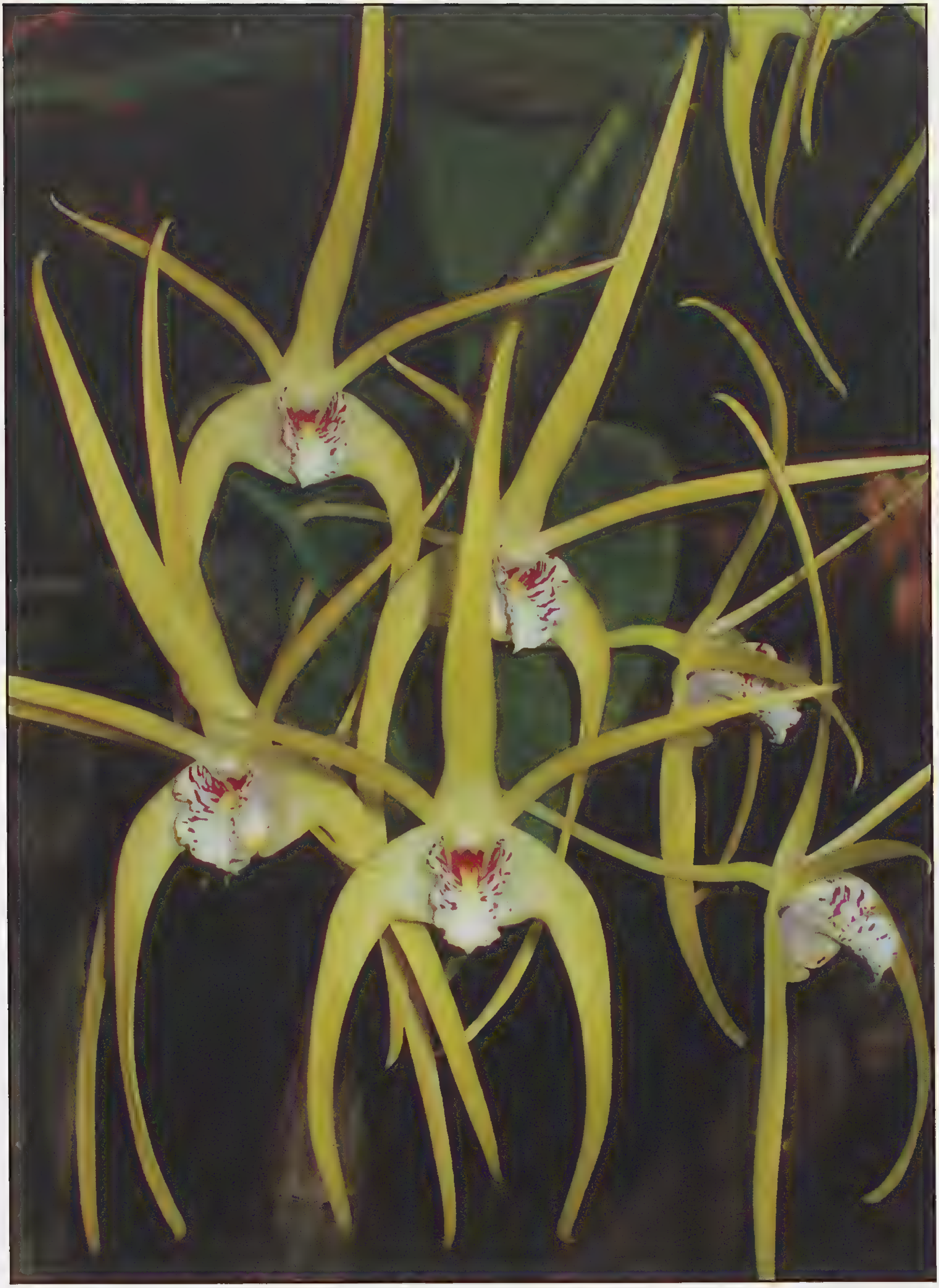


Dendrobium Hilda Poxon ‘Macquarie Redlip’



Dendrobium Hilda Poxon

Photos Michael Harrison

Dendrobium Hilda Poxon – A perennial favourite.

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When orchid breeders begin hybridising within any group of interfertile species, the first generation of plants to appear are primary hybrids, that is crosses where each parent is a species. Once these primary hybrids begin to flower, then they themselves are available to be used for further breeding, and secondary hybrids may be produced, and so on. After several ensuing generations of breeding, the great majority of continuing work is done using previously created hybrids, for it is these plants that are showing the combined characteristics, drawn usually from a number of background species, that breeders and growers are looking for. From time to time breeders may reintroduce one of the original species in order to boost certain features, but by and large, by this stage, the older primary hybrids have been superceded by newer, horticulturally superior, complex hybrids.

But not always! Among the many hundreds of complex *Dendrobium* section *Dendrocoryne* hybrids available today, including the so-called hot/cold crosses, one of the "old" primary hybrids remains in great demand and regularly competes successfully as a showbench exhibit: *Dendrobium* Hilda Poxon.

Of course, *D.* Hilda Poxon was one of the most obvious crosses to make in the early stages of native orchid breeding. The parents, *D. speciosum* and *D. tetragonum* are two of our most popular and widely grown species, with features well suited to hybrid lines. *D. speciosum* provides ease of culture, excellent flower count, heavy substance and texture, and good floral arrangement, whilst *D. tetragonum* brings size, intensity and variation in colour, and elegance of shape.

The hybrid was originally made by the late Ira Butler in the 1960's, but he passed away in 1974 without having registered it. In 1977, Noel Grundon rectified this omission, naming the hybrid *D.* Hilda Poxon after a well known local orchid identity in Toowoomba. In keeping with convention, Grundon listed Ira Butler as the originator (in brackets) in the registration details.

At the time of its registration, the two parents, *D. speciosum* and *D. tetragonum*, were both considered to be complex species, each consisting of a number of botanical varieties, and the name *D.* Hilda Poxon was applied regardless of which varieties may have been used. However, since that time these species have been taxonomically revised, with the *D. speciosum* complex now split into six separate species, and the *D. tetragonum* complex now consisting of four species, treatments which have considerable scientific merit but which have not been widely embraced by hobbyist growers.

For those mathematically minded readers, the full suite of possible names for primary hybrids between these groups would total twenty four, should the Royal Horticultural Socirty accept the "new" species names for hybrid registration purposes. Under such a scenario, *D.* Hilda Poxon would continue to be the name for *D. speciosum* (var. *speciosum*) x *D. tetragonum* (var. *tetragonum*), but twenty three extra hybrid names conceivably could be registered for the various other combinations. This may or may not be desirable in the long term, but for the present the name *D.* Hilda Poxon will continue to be applied regardless of varieties or higher taxa.

D. Hilda Poxon has been made and remade many times over the years by a number of breeders using various combinations of the varieties of *D. speciosum* and *D. tetragonum*. Indeed, it seems likely that in the original cross, Ira Butler used not true *D. tetragonum*, but one of the other varieties and during the 1970's Wally Upton's remake utilised his famous *D. tetragonum* 'No.1', which today would be recognised as *D. melaleucaphilum*. This was an especially fine version of *D.* Hilda Poxon, with a much improved labellum shape attributable to Wally's florific and shapely 'No.1'.

One of the most sought after remakes was the outstanding red-lip line produced by the late Sid Batchelor in the mid 1980's, which combined the lovely bright yellow segments typical of *D.* Hilda Poxon, with a striking, marbled purple/red labellum. When these plants first started flowering they were an instant hit and much like *D.* Avril's Gold today, everyone was chasing after a plant for their collection. To this day, these red-lip *D.* Hilda Poxons' are much valued plants, and those lucky enough to have them are generally not inclined to part with them.

The unusual labellum colour was inherited from one of Sid's most valuable breeding plants, his *D. tetragonum* 'Yondi #1', which was actually an atypically coloured form of *D. capitisyork* (known at that time as *D. tetragonum* var. *giganteum*). Acquired as a seedling from native orchid nurseryman Noel Jupp in the 1970's, 'Yondi #1' had been produced by Jupp as an outcross between two wild collected plants with suffused pink labellum's, a naturally rare colour form in *D. capitisyork*. This colour was intensified in the seedling Sid eventually flowered and named 'Yondi #1', and he went on to use it with great success in his breeding programmes. Indeed, the purple/red labellum now seen in many native Dendrobium hybrids is a dominant feature derived from this particular plant, for it generally carries through to successive generations.

One of the best features of *D.* Hilda Poxon is its reliability, year in year out, as a flowering plant. Unlike its parent, *D. speciosum*, which tends to be somewhat erratic, *D.* Hilda Poxon generally produces a full flowering every year, and it will also often produce out of season flowerings as well.

It may be slow to mature, but once an adult plant, *D.* Hilda Poxon is usually a strong grower. However, as a rule, plants of *D.* Hilda Poxon do not like to be disturbed too much, and they certainly resent being divided. They should be repotted only when really necessary, perhaps only every five or six years, and then a simple potting-on is the best option. If a full repotting is required, then as much of the root system as possible should be retained, even at the expense of leaving some of the old potting mix, and the plant should be trimmed of only the fully dead back canes. If a plant has to be divided, then this should be done as gently as possible, and it should never be cut into pieces which are too small. Many a plant of *D.* Hilda Poxon has been lost due to inappropriate or rough handling during repotting.

As a mature, specimen-sized plant, *D.* Hilda Poxon is difficult to better, and many a plant has formed the centre-piece of a native orchid display. Occasionally, a plant will come up for sale on a sales table or society auction. If you get the chance snap it up, for it will bring years of growing pleasure. Indeed, a large plant will generally be many years old, and this investment in time will usually dictate a fair asking price. But recognise the value and make the purchase; you will not regret it.

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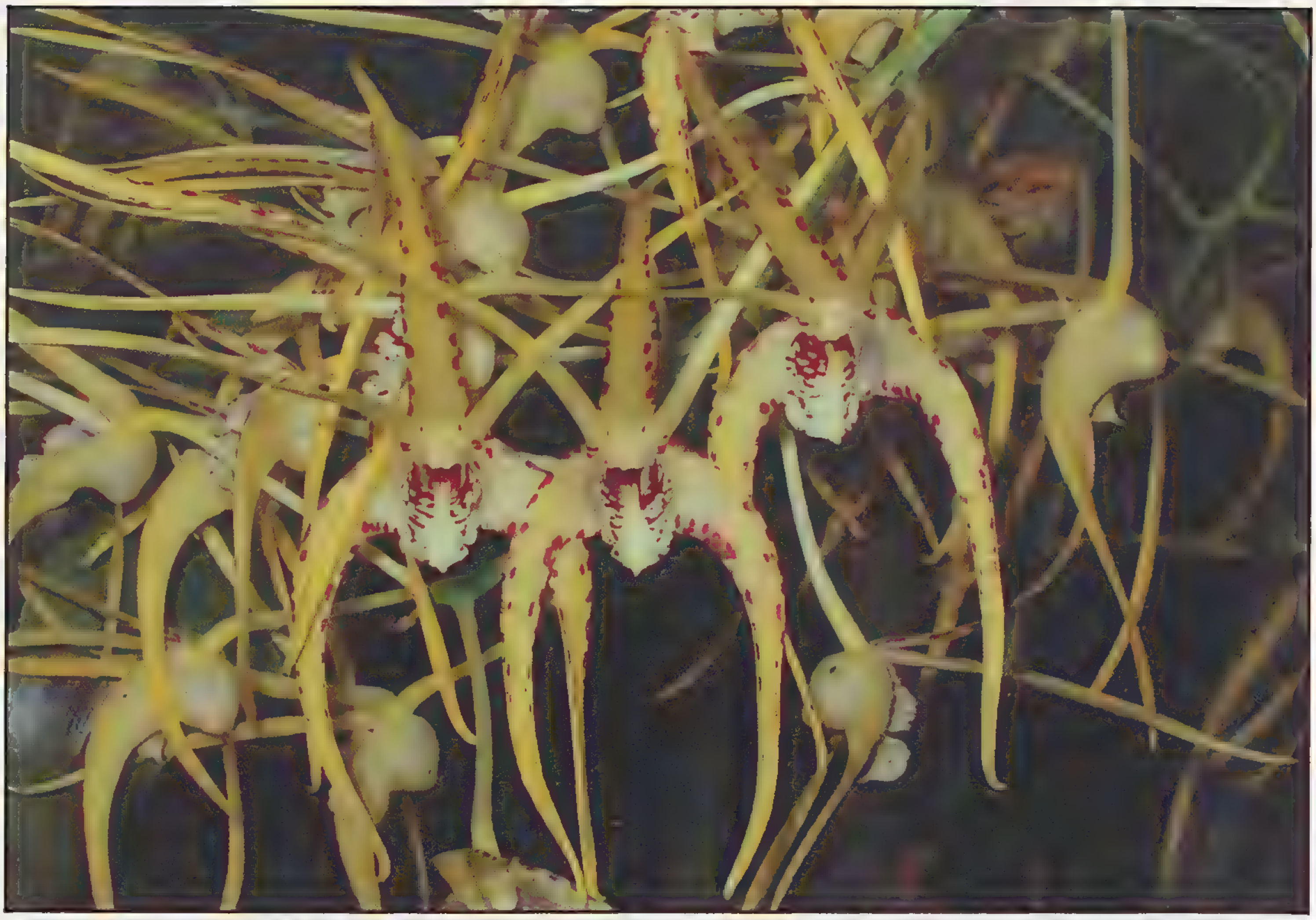
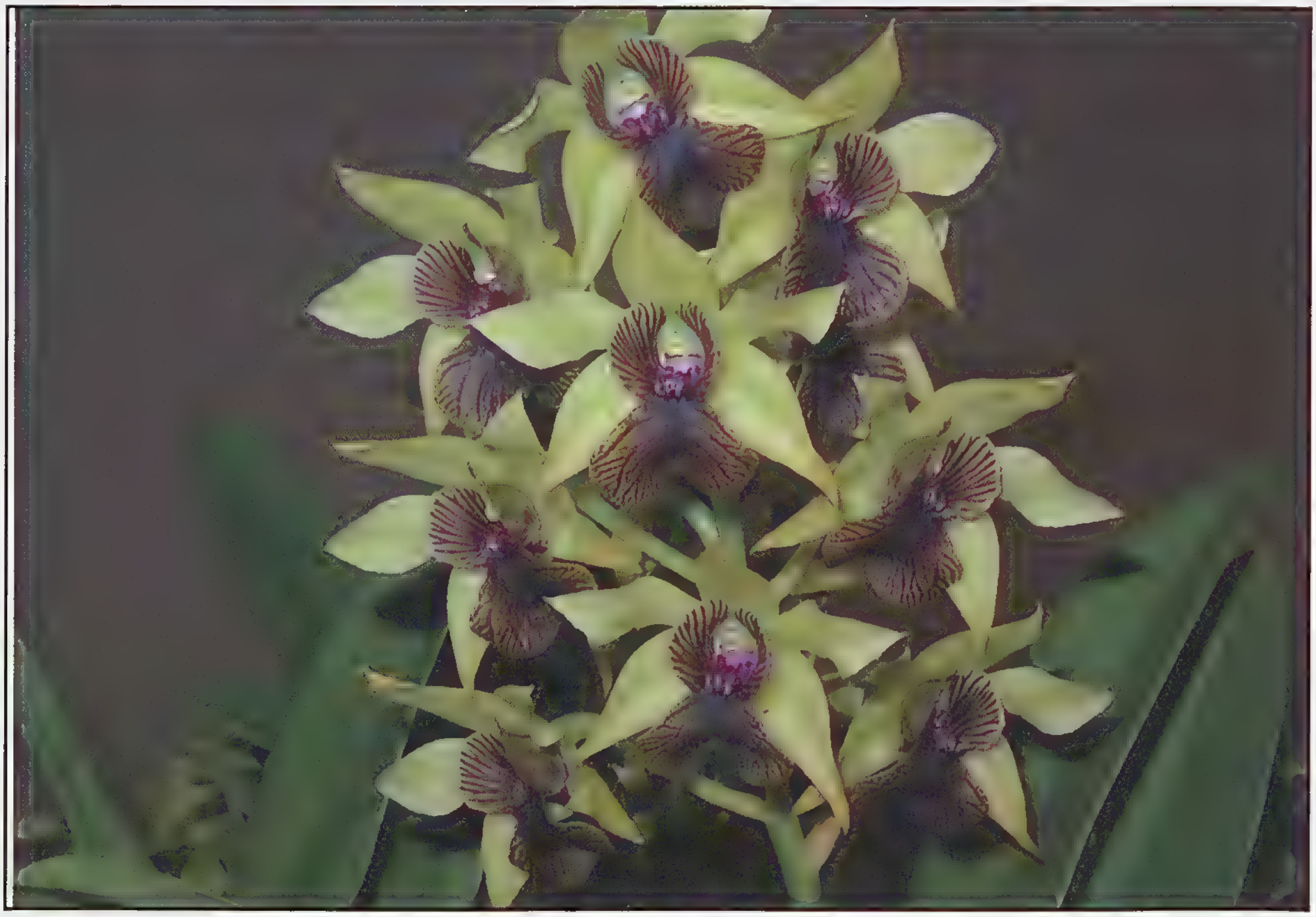
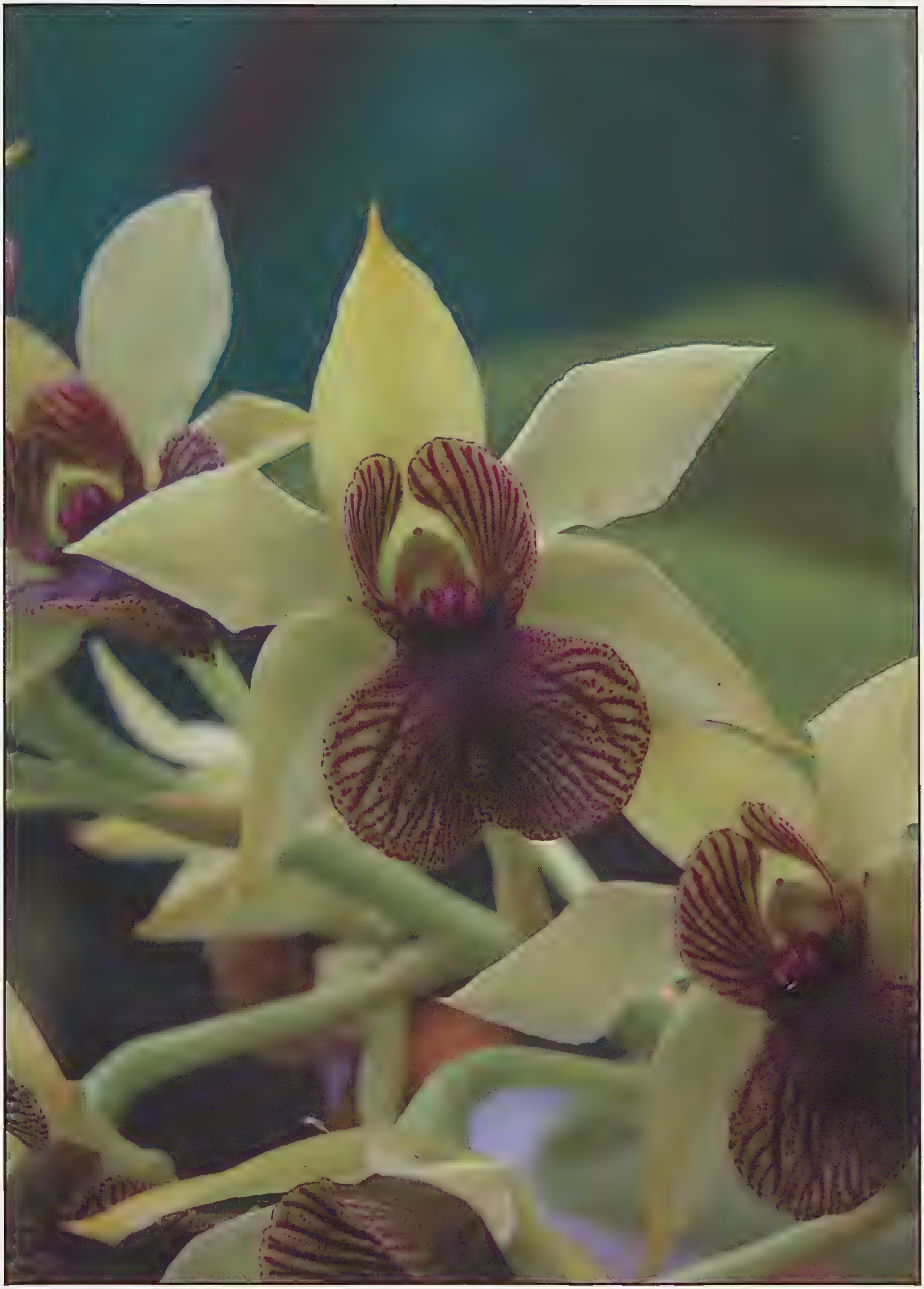


Dendrobium Hilda Poxon '2nd Best' Photo Michael Harrison



Dendrobium Gerald McCraith 'Bill' AM/AOC 2003 Photo Bil Dobson



Dendrobium Gerald McCraith 'Bill' AM/AOC 2003 Photo Bil Dobson

Dendrobium Gerald McCraith 'Bill'

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Grand Champion of the North Shore Orchid Society's Spring Show at Chatswood was Lorraine & Bill Dobson's *Dendrobium* Gerald McCraith 'Bill', which also received an Award of Merit from the Australian Orchid Council.

Dendrobium Gerald McCraith is a primary hybrid between two Latouria Section species from New Guinea: *Dendrobium engae* and *Dendrobium convolutum*. The two species come from very different habitats.

D. engae is a species from the Enga Province and other highland areas of Papua New Guinea, at an elevation of between 1,800 and 2,700 metres. It grows as an epiphyte on Nothofagus trees in montane rainforests, though occasionally it grows on rocks. The area has cool to intermediate temperatures and year-round rainfall, and the plants grow in situations where there is strong light. *D. convolutum* is a species from lowland areas near Milne Bay, at altitudes below 650m. Its habitat is hot, steamy lowland rainforest.

D. engae has large fragrant flowers with creamy white sepals and greenish white petals, and a lip which is greenish yellow or yellow, heavily spotted with maroon on the mid-lobe and veined maroon on the side-lobes. I have not seen D. *engae*, but there is a very nice photograph of a single flower on the cover of the August 1990 *Australian Orchid Review*. The inflorescences which are up to 25 cm long have three to fifteen flowers. *D. convolutum* has inflorescences to 12 cm long with two to seven flowers which open widely. They have apple green sepals and petals, and a lip with maroon veins on the side lobes and heavily suffused maroon on the mid-lobe. The flowers are waxy in texture.

D. Gerald McCraith has apple green flowers with a labellum heavily marked with maroon. The flowers last for a few months, and fade to a greeny-yellow over that period. 'Bill' had several inflorescences with between about nine and fourteen flowers per inflorescence.

Phil Spence made this cross, which he registered in 1995. In 1996 he received a Highly Commended Certificate for *D.* Gerald McCraith 'Bliss'. The flowers of plants of *D.* Gerald McCraith tend to be very similar, but the award photo of 'Bliss' on the RHS Orchids 98 CD-ROM suggests to me that the flowers of that clone look a little bit more like *D. engae* in shape than 'Bill'.

It would be interesting to see the two together. I understand other plants of *D.* Gerald McCraith have been awarded, but it is hard to find out the details because information about Australian awards has not been readily available since 1994. Full details have not been published since 1991, and this makes it very difficult to research awards.

D. Gerald McCraith grows cool. I bought a compot from John Woolf a few years ago and the small plants have grown well in my shadehouse with minimal signs of dissatisfaction with the winter cold, though they certainly need protection from the winter rain. I think Woolf Orchidculture still have plants in their catalogue.

Reserve Champion was Lorraine & Bill's *Dendrobium polysema* 'Tallboy'. This species is from montane rainforest in eastern Papua New Guinea at altitudes of

1,200 to 1,900 metres, and also grows in the Solomons and Vanuatu, where it ranges from sea level to 1,000 m.

If you want to know how to grow these wonderful Section Latouria species and hybrids, you need do no more than get a copy of the March 2003 issue of *The Orchadian*, which has a photograph of *D. polysema* 'Lorraine' AM/AOC-NSW on the cover, and contains an article by Bill in which he describes how he and Lorraine grow them.
(Reprinted from the NSOS Bulletin)

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A Port Lincoln holiday!

Ruth Rudkin.

Following the Australian Orchid Conference in Adelaide recently, I flew to Port Lincoln to visit relatives and as luck would have it, to meet two fine ladies, Pam Hewstone and Jane Hutchinson, as well. Both of them are particularly interested in Australian native orchids, and have done a great deal of research around the Lower Eyre Peninsula with the help of Thelma Bridle and Cathy Houston, from the Native Orchid Society of South Australia. They were able to spare an afternoon to show me what they have found near the town.

That afternoon the three of us set out with our cameras. I was burdened with tripod, notebook, pen, and a pair of glasses as well. As we drove into the country the vegetation changed from heathland scrub, to sheoak and woodland habitats.

The previous day had been warm and sunny and I was promised we would find many orchids in flower. But the wind was bringing up some clouds, and the previous day's beautiful display of sun orchids was not to be. However, in no time we found plenty of other orchids in flower.

Out first stop was in woodland at Wanella Settlement Reserve, off the road to Cummins. There were plenty of firmly closed, pink sun orchids, *Thelymitra luteocilium*. Hard by, a *Diuris pardina* (the Leopard Orchid) was fully open, as was a little *Microtis parviflora*.

Further on it was *Pyrorchis nigricans* which turned out to be quite common there, then *Thelymitra flexuosa, Microtis unifolia,* and *Diuris orientis*. More and more different genera were found, *Prasophyllum fitzgeraldii*, *Arachnorchis* species 'Gold Bayonets', *Microtis arenaria*, a hybrid *Prasophyllum fecundum* x *P. fitzgeraldii*, and a large group of yellow sun orchids *T. antennifera*. Not far away was the very rare *Arachnorchis brumalis*. On the way back to the road, we turned off to find the all so rare Metallic Sun Orchid, *Thelymitra epipactioides*, and fully open!

Off to Wanilla Conservation Park where we found both the pink and the white *Caladenia latifolia*, before driving back to Wanilla Forest to see a patch of *Pterostylis plumosa* among the sheoaks. What an afternoon that was! So may different genera, so close to the town!

A word of warning, if you need a tripod for macro photography in the field, then get one that allows you to use your camera close to the ground. Zooming with a digital camera like mine was not good enough. So the photos I have are from Pam. I must thank Thelma Bridle for her article on the Orchids of The Eyre Peninsula in the March 2003 issue of the NOSSA Journal, which alerted me to the possibility of seeing orchids while in Port Lincoln.

I can highly recommend Port Lincoln for a successful and enjoyable orchid hunting holiday. Pam and Jane have published a little book "Orchids of Lower Eyre Peninsula", ISBN 0646 41938-2, available at the Art Gallery in Port Lincoln. This would be invaluable.

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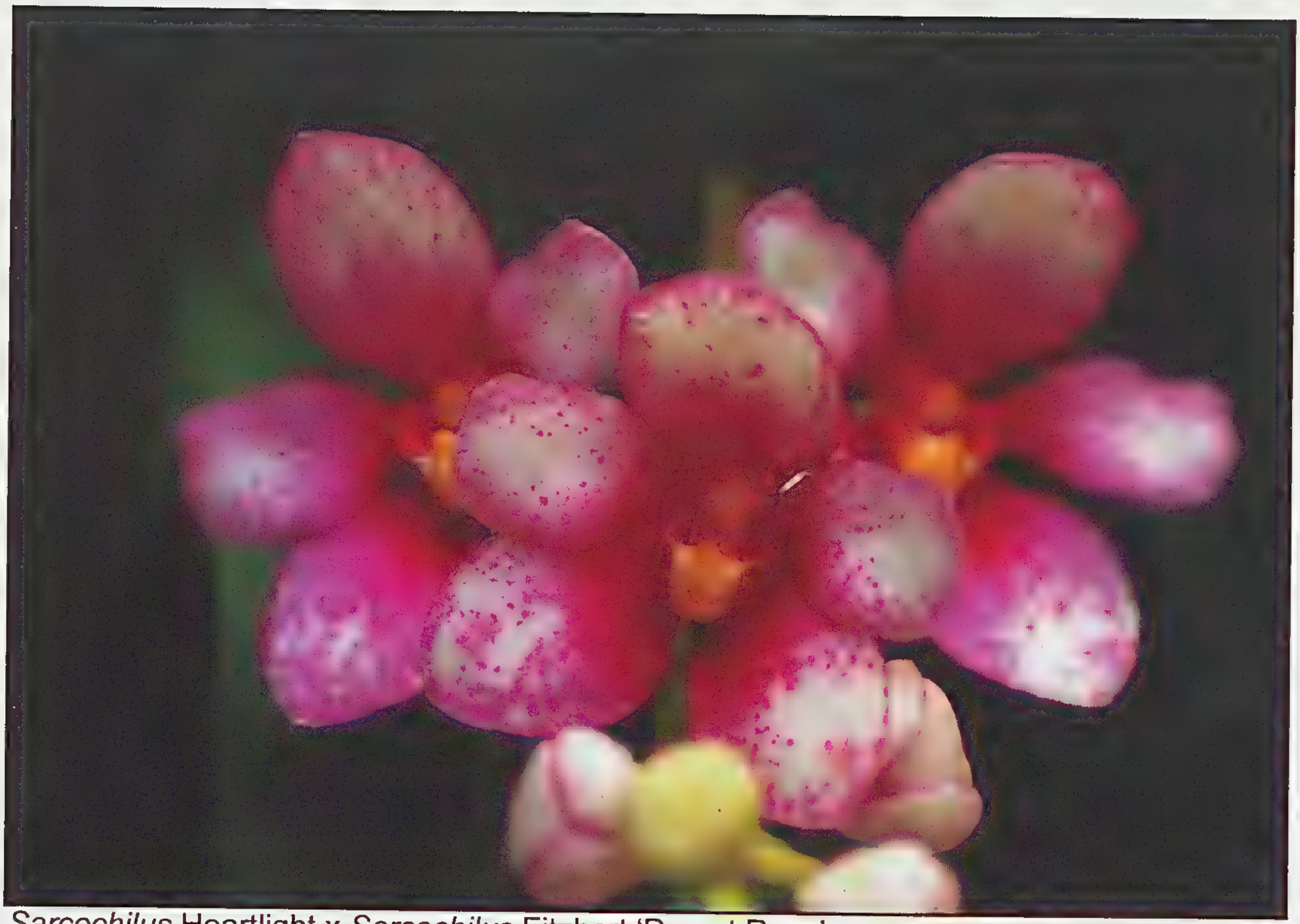
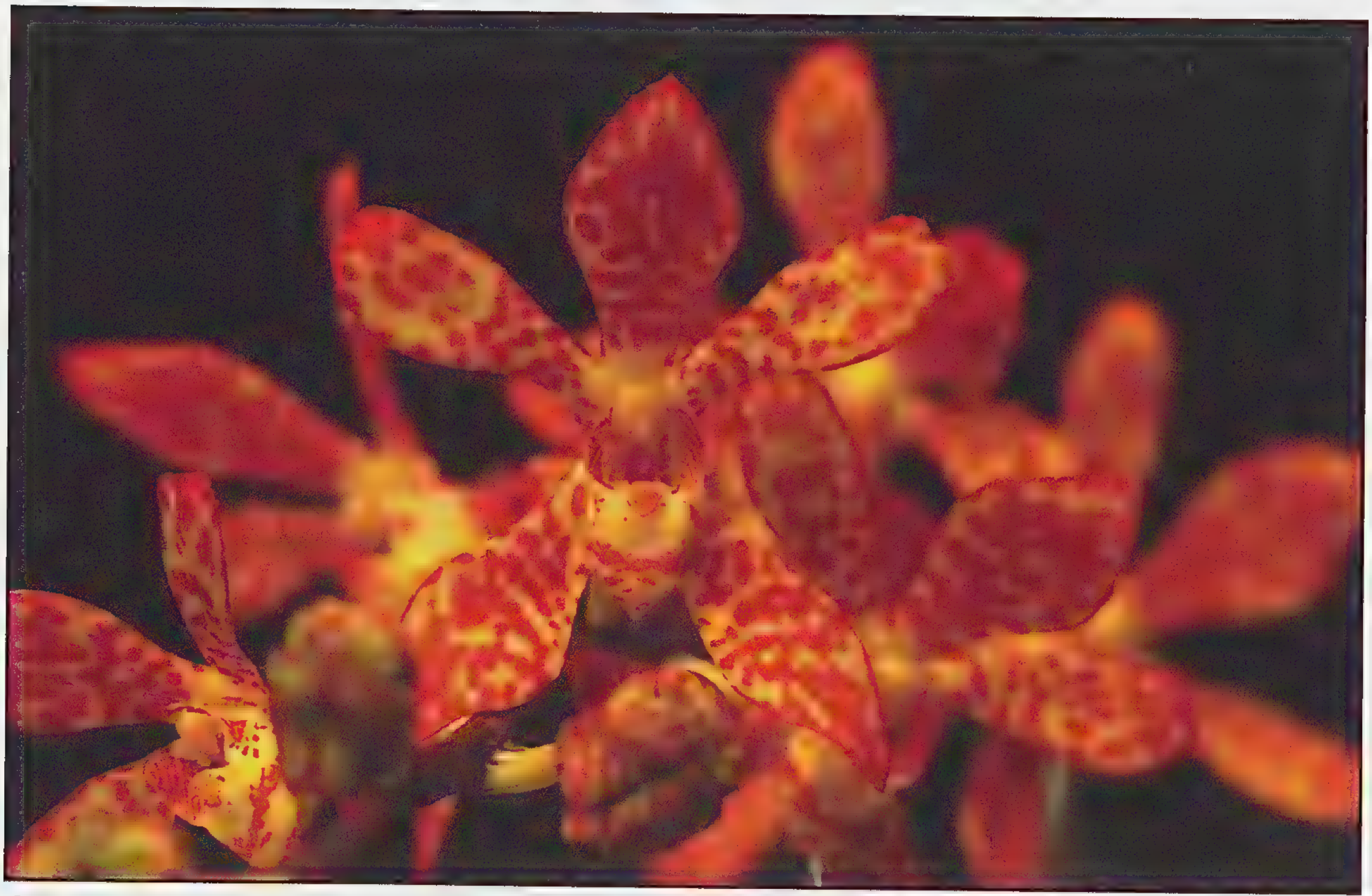


Sarcochilus Heartlight x *Sarcochilus* Fitzhart 'Desert Rose'



Sarcochilus Marion 'Chilli Pepper'

Sarcochilus Olive Nymph 'Rusty' Photos Frank Vernon

Sarcochilus Hybrids – a flower for all seasons.

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For quite some time now I have been fascinated by Sarcochilus orchids and have invested a lot of thought (and quite a bit of my pension) in wondering if it were possible to extend their flowering period. Well, the answer is YES! At the time of writing these notes (July 2003) the first early Sarcochilus, *S.* Southern Cross, is open and I still have *S.* Velvet and *S. ceciliae* x Riverdene in flower from last season. Three hundred and sixty five days during which I have never been without a Sarcochilus in flower.

It seemed, from observation and reading that, by choosing hybrids carefully, such a result was, theoretically, possible; the only thing stopping it was that not many hybridists seemed to be thinking along the same lines. Of course, if there are any hybridists out there who are working along these lines and of whom I am not aware, please let me know. The biggest problem is that here in Western Australia there are really only two nurseries who offer Sarcochilus orchids for sale and neither of them, so far as I know, do their own hybridising. We are limited to those eastern state growers who are prepared to offer plants or flasks to Western Australian growers. I do not consider that my plants are of good enough quality to attempt my own hybridising nor do I have access to some of the species which I feel essential to achieve this goal.

To have Sarcochilus hybrids that flower as early as possible, means that those with S. *australis* and S. *falcatus* in their parentage are most likely to be successful, and for late flowering plants those with *S. hirticalcar* and *S. ceciliae* and/or *S. roseus* are essential. I make a point of looking for plants or flasks where these species are used when ordering, and search diligently through those offered, especially at ANOS Conferences, for crossings that may interest me. I am also looking for unusual colours and patterns in Sarcochilus which will flower through the 'normal' flowering season. Not all my choices reach my expectations of course but, on the whole, Sarcochilus hybridisers are doing a great job and each year I look forward to the coming crop of seedlings.

One suggestion I would urge on growers is to get several plants of any cross which you think interesting, many of you are already aware of this. As an example, some years ago I obtained a flask of *S.* Olive Nymph (Melba x *australis*) from Wal Upton. All the plants except one grew and flowered easily and were all very similar, a smallish white/cream flower on a pendulous raceme, very pretty but not exceptional. The remaining plant struggled but I persevered as I didn't want to admit defeat. Thank goodness I did, it turned out to be a fine rusty red! This, of course, is the reward for growing seedlings; you never know when something extraordinary is going to appear.

Included are a few slides of some of the more interesting seedlings I have flowered over the last few of years. Considering the limited choice we have in Western Australia, imagine what must be available to growers in the east! In my opinion, Sarcochilus orchids are some of the easier and certainly most rewarding native plants to grow. While by no means denigrating our Dendrobiums, which I also grow and enjoy very much, I have an especially soft spot for these charming little orchids. -oOo-

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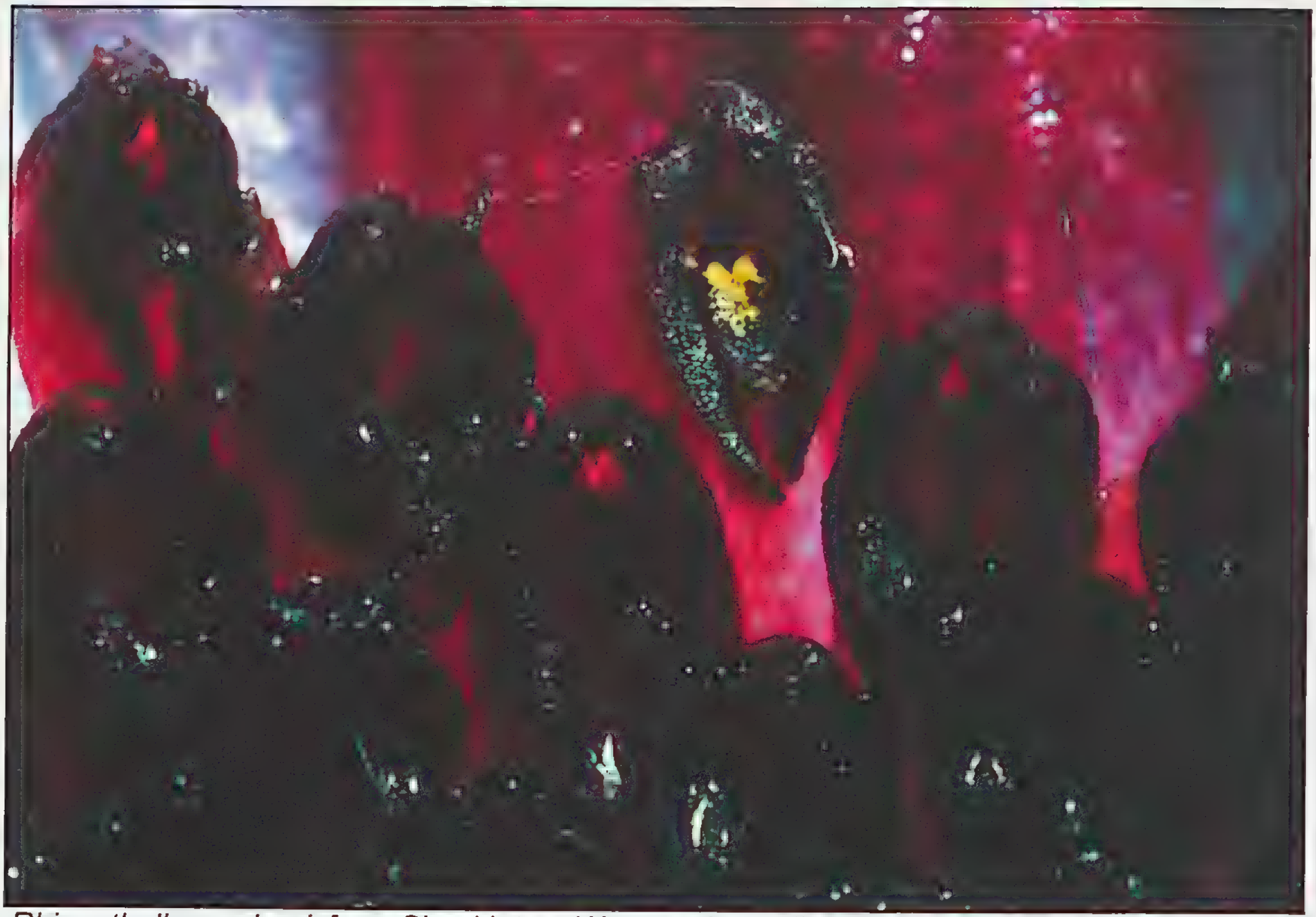
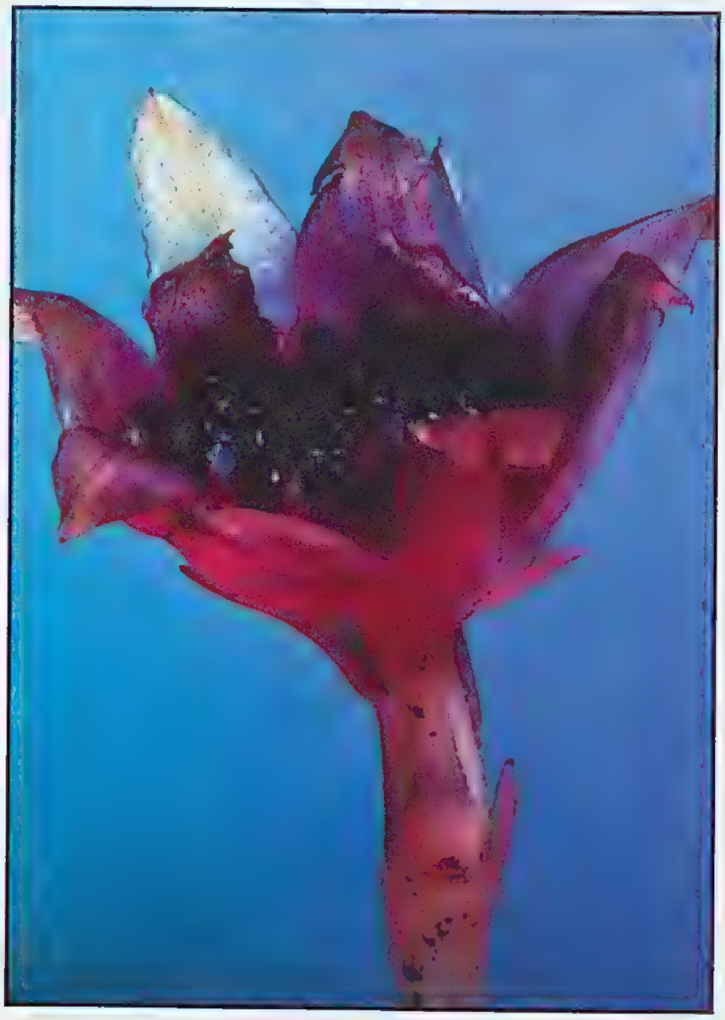
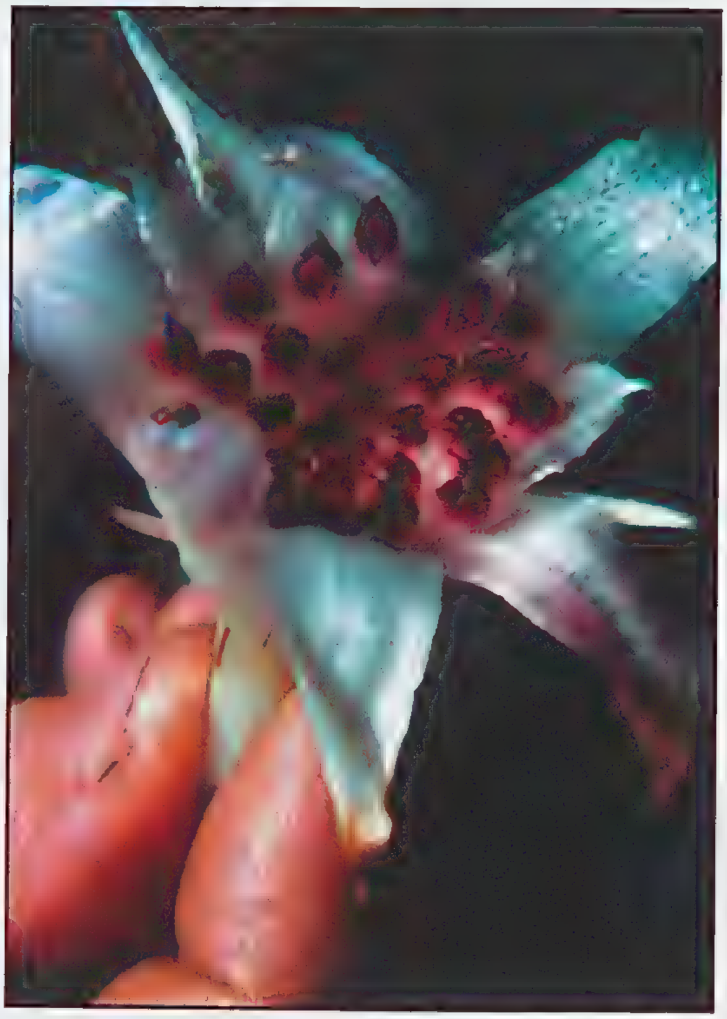


Rhizanthella gardneri, from Shackleton, Western Australia.
Note the pollin which has been transferred.

Photos Ron Heberle



Rhizanthella gardneri, from Corrigin.



Rhizanthella gardneri, from Munglinup.

Rhizanthella gardneri 'The Underground Orchid'

Ron Heberle
Albany
Western Australia

In 1928 farmer John Trott, of Corrigin, unearthed the first specimens when ploughing new land that had been previously rolled and burnt. He took the specimens to Charles Gardner, Government Botanist, who in turn forwarded them onto Dr Sanders Rogers, who named the species in Gardner's honour.

As the common name implies, the species spends most of the life cycle underground, growing in association with, and close to, *Melaluca uncinata*, which sheds its leaves to create thick layers of leaf mould. The developing capitulum of tiny crowded orchids, are exposed when the floral bracts expand and occasionally push through the leaf mould, allowing light and presumably pollinators to enter.

Since the first finds, just six confirmed sightings were made in the Corrigin and Babakin areas. A breakthrough occurred in 1979 when farmer, John McGuinness of Munglinup, (east of Ravensthorpe) turned over a mallee root and found an orchid under it. Research then, and again in 1980, produced a total of twenty six specimens.

Further collections were made at the Oldfield locations, with another nine plants sighted. Finance was made available for research from the World Wildlife Fund, resulting in a well organised research program led by Kings Park research scientists and assisted by the members of the Western Australian Native Orchid Study and Conservation Group.

Around one hundred and fifty sightings were made as a result of this and ongoing research, the knowledge of the biology of Rhizanthella has been greatly advanced.

The above covers the history and subsequent research of the Underground Orchid, *Rhizanthella gardneri*.

Consultation with a "New Land" farming family, who developed a farming property at Shackleton, in the early 1920's, gave some interesting facts that suggest that Rhizanthella could have been quite abundant and wider distributed than was previously thought.

New land was rolled with a converted steam boiler pulled by horses, with the driver walking behind because of rough country. "Mole Board" ploughs were used, turning the surface clods over, exposing the subsoil. A white fungi was often observed, that created interest to farmers throughout the district. There is a strong possibility that these fungi could have been Rhizanthella.

Had the family ever seen the Underground Orchid? Yes and they are still present on the property. Some friends from Narrogin, interested in orchids had spent a weekend searching for orchids in general, and had found five Underground Orchids in the corner of a paddock which had not been cleared because of large Salmon Gums trees.

They photographed the orchids growing close together, with all bracts breaking the surface. This writer has seen the photo and there is no question of identification.

Perhaps extending the research areas to other than Babakin, Munglinup and Oldfield River areas may be a useful exercise.

-oOo-

Orchids in the dust.

Orchid Journey: Western Australia in a drought year.

Part 2 Perth and south.

By Linda Rogan

Perth glistened in the sunshine across the blue waters of the Swan River. The atmosphere in Kings Park was lazy and seductive; an invitation to stay and visit the Wildflower Show. Many orchid species were on display and a fascinating video showed the fertilisation of an orchid by a wasp. Also fascinating was the display of the "Bubbling Banksias". Plants were growing in water filled glass tubes at eye level with oxygen and nutrients bubbling through. The intricate proteoid root systems were the focus of the display. Nearby, the precise, beautiful botanical art displayed by the Botanical Artists Association (including orchid author and artist Rica Erickson) was not to be missed. By the end of the day, I was keen to get back into the bush to search for "the real thing".

On 30th September, 2002, the challenge of the Bibbulmun Track was irresistible. Final portions of this track opened in 1998, and now the fit can backpack the entire 950 km from Kalamunda to Albany. I could manage that, in my dreams, so we chose day walks wherever we could reach the Track. It starts less than 10 km from the Perth airport, at the popular Jorgenson Park. Exotic weeds and dog walkers were left behind after the first hour when we climbed out of the creek side area into the granite outcrops of Kalamunda National Park. Orchids and other blooms were plentiful and it appeared recent rains had been adequate.

Here the clear hues of Blue Lady Orchid *Thelymitra crinita* and Scented Sun Orchid *T. macrophylla* as well as the occasional Silky Blue Orchid *Cyanicula sericea* provided blues to contrast with the reds and golds of the Bookleaf *Daviesia cordata* and the citrus scented *Darwinia citriodora.* Common also were *Pterostylis recurva* and *P. barbata* (our first sighting), *Caladenia flava* and *C. longicauda.* A single Diuris species high on a bank beside the track appeared to be *D. longifolia*. We were tired but happy at the end of a long day's walk.

A day was needed catching up on laundry before heading south. A fortunate stop along the way was Bungendore Reserve, 30 km south east of Perth. This park is on a lateritic plateau, 280 m high, with some Darling Scarp granite bedrock exposed. Jarrah and Marri woodland predominate. It is another old gravel pit turned floral reserve. At least here, gravel removal had ceased and active management is evident. Seven orchid species were sighted at a quick look plus the beautiful scarlet flowers of *Grevillea wilsonii.* My first sighting of the unmistakable Leaping Spider Orchid *Caladenia macrostylis* was here.

Continuing on, at the tiny town of Wandering, 80 km southeast of Perth, we crossed that line where the drought asserted itself. The landscape was parched pastures and wheat fields. We had been lured inland by reports of the Dryandra Woodlands Reserve where we hoped to see some of Western Australia's special marsupials. This is one of the most important reserves in the whole of the wheatbelt and totals 28,000 hectares in seventeen separate vegetation blocks. The woodland survived the massive land clearing of the early 1900s due to the existence of Brown Mallet *Eucalyptus astringens,* a source of tannin for the leather trade. Harvesting the Brown Mallet was an important secondary income source for early farmers and these stands were initially preserved for this purpose. In 1920s the new Forests Department established Brown Mallet plantations to keep this industry going and in the process, adjacent pristine Wandoo woodland was also kept intact. While much of the Mallet was harvested, the Wandoo woodland served as catchment areas for the many dams that supplied water for about fifty steam locomotives the industry required. Nearly 130,000 tons of the bark had been exported to Germany before the war years. Synthetic tannins replaced the bark in 1962 and the pressure came off the Mallet industry. The value of these unique remnants was finally recognised by the government. Now this area supports thirteen species of native ground-dwelling mammals, including the numbat, Western Australia's faunal emblem. Nearly annihilated by foxes and drought by 1979, the population made significant recovery when fox baiting was initiated in the 1980s. Along with the fauna, the floral attributes of Dryandra Reserves are remarkable with eight hundred and sixteen species identified from two botanic zones that have nearly disappeared from the central wheatbelt. These are Darling Botanical Province and Avon Botanical Province.

When we reached the Dryandra Woodlands Reserve, dust roiled up and coated the roadside bush a uniform rusty red. I held little hope of finding orchids. We camped well off the dusty road near Congelin Dam. Here was open eucalypt woodland and sheoak trees grew along the old train line. Little understory herbage was evident. A keen eye was needed to dispute this first impression. In fact the area was spread with many tiny orchids; so small campers missed seeing them entirely. I was soon on my belly examining and photographing Greenhoods and Dragon Orchids. The strange trifid labellum of one tiny greenhood puzzled me. Well known to Western Australians, this was my first sighting of the Frog Greenhood *Pterostylis sargentii.* In all we counted and photographed nine species including a lone example of Crimson Spider Orchid *Caladenia footeana* and the Hairy Rufous Greenhood *Pterostylis ciliata*. I suspected that a good year would deliver more species and larger specimens. A further two familiar species were seen in the wetter areas along the walk to Lol Gray Picnic Site. Although the camping was pleasant enough, the only marsupials seen were possums. Local campers said wallabies and Woylies were usually common but they hadn't seen any this year. This was a disappointment.

The second morning we set out along Tomingley Road, travelling slowly to avoid raising the dust. We'd seen a few rabbits the night before so first thought the animal moving cautiously onto the track ahead was just that. Its long tail, graceful movements and marked strips across its hips quickly corrected that impression.

"That's no rabbit, it's a Numbat!"
The beautiful mother had a baby perched on her back. Peter grabbed the camera, "Too late!" as she slipped off into the bush.

Encouraged by the sightings at Dryandra, we took a side trip 40 km north to Boyagin Rock on 4th October. An easy walk took us to the high point of the rock. Orchids were found at the base of huge boulders and in breaks in the rock where water drained. Six species were found. Most common was *Thelymitra antennifera*. The Fringed Mantis Orchid *Caladenia falcata* was a first sighting for this trip.

The next day, clouds gathered and change was in the air. We headed west from Dryandra driving up the east side of the Darling Range to the escarpment. Here the forest community of Dwellingup, 97 km south of Perth and reputedly one of the wettest in southern Western Australia, nestles amongst tall Jarrah. Drizzle soon changed to intermittent torrents of wind driven rain. We were surprised and pleased to find the Dwellingup Caravan Park was sheltered from the winds by the trees and maintained much of its natural ground story. Thelymitra buds and the ubiquitous *Caladenia flava* were seen from the edge of our dripping awning. Nearby, the Forest Heritage Centre displayed well-crafted wooden furniture and was tucked in amongst Jarrah and Marri with carefully preserved natural bush. *Lyperanthus serratus* bloomed at the edge of the entry path.

Rain still threatened the next day but we decided to risk an 8 km walk along a bit of the Bibbulmun Track as a return trip from the heritage train ride to Etmylin Siding. Although some weeds were present, especially in the burnt out town sites, natural vegetation was more common and the walk was pleasant. We began to see white forms of *Caladenia flava* and other likely hybrids. The Leaping Spider orchid was spotted again. Thelymitras were in bud and leaves of Pyrorchis and Corybas were common. This area showed no sign of having been drought affected.

The next day, a drive out along Scarp Road was notably for the wide range of colourful *C. flava* hybrids as well as numerous *C. longicauda*.

A visit with friends on the west coast at Bunbury was next on our schedule. It was the 8th October when we left Bunbury and passed through the Tuart Forest National Park immediately to the south. The last significant stand of Tuart trees, *Eucalyptus gomphocephala*, is found here but there was no chance of orchids. The ground was totally covered by green leaves and white flowers of Arum lilies. Some were even starting to grow epiphytically in moist tree forks. We continued south and were pleased to find a pleasant bush camp at Canebrook Pool about an hour further on south of Busselton. The pool in the upper reaches of the Margaret River was cold and deep. Purples and blues of Hardenbergia and Tree Hovea, contrasted with red orange pea flowers. Orchid buds and leaves only were seen here but the setting was superb. From here we could head out to Dunsborough, Carbunup River, and the upper Cape areas.

The following day, our first stop was Carbunup River Reserve, 10 km out of Busselton on the Bussell Highway. This is a Jarrah, Marri and Peppermint woodland on alluvial, loamy flats.
"I've heard the Carbunup King Spider Orchid *Caladenia procera* stands a meter tall here!" I said as I opened the car door. Unbelievably, two tall spider orchids stood within ten feet of me. Large greenish lemon, broad column, long maroon tipped labellum, "That'll be it! What a beauty!" I exclaimed. The entire morning was spent searching and enjoying this rich reserve. At one point a stirring of leaves and sight of a scaly form at my feet made me jump.
"Just a stumpy tail" I noted with relief.
The brown and grey patterns blended perfectly with the dry leaf and lichen surrounds. Other species were added to my list: the first of many Pink Enamel Orchids *Elythranthera emarginata*, Chapman's Spider Orchid *Caladenia chapmanii*, and a small Rusty Spider Orchid *Caladenia ferruginea* plus a range of likely hybrids. The last listed species was discovered when we spread our picnic rug just missing it.

After lunch we opted for a good walk in ocean air and a chance of more orchids. We headed to Sugarloaf Rock and walked to the lighthouse at the Cape Naturaliste. Beautiful ocean views impressed but the only orchid species seen were the three that were common over this period of travel ie. *Caladenia latifolia*, *C flava* and *Elythranthera brunonis*. As we neared the lighthouse increasing prevalence of exotic weeds including Arum lilies, was discouraging.

The next day, we decided to explore the Dunsborough area. First the cliffs above Meelup Beach showed us eight species but the only addition to the list was the Forest Mantis Orchid, *Caladenia attingens* and the White Mignonette Orchid *Microtis alba*. Later, within Dunsborough we explored a small reserve about the size of a city block. It would be the most strikingly beautiful floral remnant we saw on this trip. If there was not already a pathway, it would be impossible to take a step without treading on *Pimelea rosea*, various yellow and white wild flowers, and orchids. It was rendered all the more beautiful by brilliant red and green of Kangaroo Paw *Anigozanthos manglesii*. I wonder how long the flora can persist in such close proximity to houses and gardens. In addition to most orchid species we had seen on the cliffs, this reserve had two spiders; I guessed they may be *Caladenia pectinata* and *C. chapmanii*.

Much of the area between Dunsborough and the west coast has succumbed to the onslaught of the Arum Lily. The only orchids we sighted in the Yallingup, Yardenup Hill Track area were tough *Caladenia latifolia* and *C. flava*, some hybrids and Diuris. Much healthier habitat remained a bit further south near Moses Rock. Here water seeps over the rocks and into the sea, and low coastal scrub is found. Hidden amongst the knee high coastal shrubs were several displays of the elegant Exotic Spider Orchid *Caladenia nivalis.* "Exotic" apparently refers to its striking beauty. This orchid is found only on coastal granite outcrops in the 25 km stretch from Cape Naturaliste and Moses Rock. Nearby several green and red orchids that appeared most like the Swamp Spider Orchid *Caladenia paludosa* were found. From here we moved on to Margaret River for an overnight stay. I would love to have had the time and the stamina to walk the entire Cape to Cape track as described by Jane Scott on her book *Walking the Capes.* This book tipped us off to a pleasant loop walk that included part of the Cape to Cape Walk and circumnavigated the Blackboy Gully Reserve. Although there were some weeds along the track, in general the native flora was rich. Common orchids were *Caladenia flava, C. latifolia* and *C. attingens*, Diuris and Thelymitra in bud. I had settled into a relaxed stride through a pleasant shady dip when I spied a particularly nice collection of *Caladenia attingens.* I had bent down to inspect them more closely when my eyes fell across the astonishing sight of a spider orchid, towering over head, it seemed. As I stood up it was still nearly hip high. Elegant pendulous tepals in the final stage of opening, the tip of one petal still adhered to the backward arching dorsal sepal in a fetching manner. This had to be the Giant Spider Orchid *Caladenia excelsa.* A sight I will not soon forget!

Later that day, the next spider sighted could not have been a greater contrast. I had followed the Cape to Cape track over loose sand hills heading toward the coast. On the way back I spotted something tiny under the Xanthorrhoea. This one required getting down on my belly to inspect and photograph. The petals had not yet separated from the dorsal sepal giving a strange triangular appearance. A check of the Hoffman and Brown confirmed my first sighting of the Limestone Spider Orchid *Caladenia bicalliata* ssp. *bicalliata.* This surely must compete as one of the tiniest spider orchids. The largest and the smallest spiders in one day! This felt very satisfying.

Our next campsite was in Leeuwin Naturaliste NP about 30 km south of Margaret River. Boranup Camp is shaded by regrowth Karri and festooned with Clematis and Hardenbergia in spring. Here we observed a fairly intensive spraying program to control the Arum lilies and only sporadic patches of the lily were seen. This is as far south in the Cape area as we travelled. Common orchids were still present in the sandy soil and I examined but didn't photograph what appeared to be a Prasophyllum. This nearly insignificant plant was hard to confirm as an orchid but with a hand lens I was able to make out the floral parts including a tiny white ruffled labellum in the typical Prasophyllum position. Several single plants were seen from there on as far as the Stirling Ranges but all were past their prime, mostly browned off, some with a little green remaining. I was waiting for one fresh enough to photograph, it never happened. The general shape was similar to the Scented Autumn Leek orchid. Of course this is the wrong time of year for that plant so it will remain a tiny mystery for me.

It was mid October and rains accompanied us when we travelled southeast from the Cape region and hit the coast again at Walpole (around 400 km from Perth). A big jump for us. The season was marching on. It poured as we settled into the Rest Point Caravan Park near Sandy Beach Road. When the rains finally cleared we spent an hour walking the Sandy Beach Loop, passing the historic sawpit and noting orchids along the way. The first different species was either a late Bearded Bird Orchid *Pterostylis turfosa* or an early Late Bird Orchid *P.* aff. *turfosa*. In roadside gravel a collection of four shy spider orchids close to the ground left me puzzled. Could they have been just a miniaturised form of the Karri Spider Orchid *Caladenia brownii*? The track reached the beach and proceeded as a narrow footpath along the neck between Walpole Inlet and Normalup Inlet. Vegetation was thicker and lusher in this moist area. Only a few metres in, two plants of a tall spider orchid arrested our progress. Are they the Tuart Spider Orchid *C. georgei*? Their height was closer to 60 cm and I am unsure whether it extends east this far. Another suspect was the Karri Spider Orchid *C. brownii*. Perhaps with the photos, someone who knows them well can set me straight.

The following day we again hit the Bibbulmun Track, this time in full rain gear, starting from Mandalay Bay. We were determined to get a good walk in that day in spite of threatening showers; intermittent, we hoped. About thirty minutes into the track we encountered two bedraggled fully laden backpackers, hoods pulled forward against the rain. Real serious types, not day-trippers like us. They nodded grimly when passing by. Looking back I could mark their progress over the hilltops we had just travelled. The rain that had kept my head down, eased a little. I slipped my hood back and spotted the first white spider I'd seen for days. The sun broke through just in time for a quick photo of a very wet Walpole Spider Orchid *Caladenia interjacens*. At the same moment the sun struck the hilltop where one of the backpackers dropped his pack and leapt and shouted, repeatedly exalting the sun (and perhaps the dramatic view). This "Sun Dance of Joy" and this orchid are forever linked in my mind. Sadly, for the dancer, the rain resumed after about fifteen minutes and continued throughout the day.

No other blooms were seen that day, but we had our first sight of buds accompanying the large green leaves we'd learned to identify as the evergreen *Cryptostylis ovata*. We knew that meant we were nearing summer and the end of the blooming season for many orchids. There was a sense of urgency to get on to the Stirling Ranges before it was too late.

Never the less, we took time to camp at the tree shaded Parry Road Campground (with solar showers). Here Maudie who, with her husband, was caretaker, told us tales of the Cherry and Rose Spider Orchids. We consulted the book together and believe the orchids we found and photographed that day are the Broad-lipped Spider Orchid *Caladenia applanata* ssp. *applanata*. These were new on my list, so I was pleased with the day.

We were torn by the need to rush on, and the desire to further explore this beautiful area. Elephant Rock in William's Bay National Park was a highlight. Tasting mead and other honey wines near Denmark spiced up our lunchtime. On an impulse we stopped at a recently burnt area of forest and granite outcrops, that was a nature reserve. The first orchids we saw were amongst a large crop of red Drosera in the open area around the boulders, the humped Leek Orchid *Prasophyllum gibbosum* and the White Fairy Orchid *Caladenia marginata* An array of spiders and possible hybrids bloomed under the trees. Leaping C. *macrostylis*, Clubbed C. *longiclavata*, Big Clubbed C. *magniclavata* and Karri C. *brownii* Spiders all featured. I was delirious. Silky Blue Orchid *Cyanicula sericea* also decorated the charred forest and tall budding Prasophyllum that resembled *P. triangulare* (a green form). My film was soon gone.
Disappointingly we also discovered several plants of South African Orchid *Monadenia bracteata*. This was the first we had seen this trip. According to Rica Erickson in

Orchids of the West, this orchid was first sighted near Albany in 1944, having had sixty years to spread, its not surprising that we saw them in most orchid habitats from Walpole through the Stirling Ranges. No place where we saw them, did they predominate over other orchids. I wonder what control measures, if any, are in place?

The following day we discovered that Mount Barker was also fire affected. A visit to the Tourist Office and the Banksia Farm tipped us off to a lovely wildflower walk. The Banksia Farm itself could have filled in the day and a lovely tearoom and knowledgeable people tempted us to linger. Finally, we set out with hints as to where some spider orchids could be photographed. Even with the instructions considerable searching was required.

"I'll just walk this track once more," I said "If we don't find anything we will go."
Then there it was, beside the track; its delicate, green, yellow and red labellum trembling in the breeze like a butterfly's wing; it was the most beautiful example of the Butterfly Orchid *Caladenia lobata* we would see for the trip. And then, a little back under the gum trees, our first sighting of Heberle's Spider Orchid *Caladenia heberleana*. Two beautiful additions to the list we'd nearly walked away from. Back in Mt. Barker was another burnt area frighteningly close to the hospital. Here were many Tall Leek Orchids *Prasophyllum elatum* and a single example of the Splendid Spider Orchid *Caladenia splendens* that stood out amongst a number of smaller, whiter spiders of the longicauda type.

Our last successful stop prior to the Stirling Ranges was an overnight stop at Lake Porarecup, a small lake north and west of Mt. Barker. The profusion of orchids and wildflowers here exceeded anything seen on this trip. I remember it as a haze of mauve, white and pink with accents of Orange Stars *Hibbertia stellaris* up near the swamp. In places Drakonorchis were so thick I was afraid to take a step; White Spider Orchids *Caladenia longicauda* ssp. *eminens*; the tiniest example I've seen of the Zebra Orchid *Caladenia cairnsiana*; Red Spider Orchid *Caladenia pulchra,* hybrid swarms of white to red lipped spiders, the tiny Dark Bee Orchid *Diuris* aff *laxiflora* intertwined with tall Drosera, the comical Ray Spider Orchid *Caladenia radiata*. I was drawn from one bloom to the next and barely avoided stepping on a baby quail as its mother flew out in front of me, startling us both. And when night fell, the mossies were as thick as the orchids.

This place gave me hope for similar orchid findings in the Stirling Ranges some 40 km east. By our arrival time, it was not to be so. The major highlights in the Stirling Ranges were the Mountain Bells *Darwinia sp.* With guidance from Ayleen Sands, of Stirling Range Retreat, we photographed further examples of *Caladenia pulchra* and *Caladenia heberleana*. I had the feeling that in this drought year, the orchid season was drawing to a close. The Ranges still had plenty to offer in hiking and general scenery. One outstanding orchid experience remained at the Retreat. We spent a very remarkable evening observing a video of the life cycle of the Thynnid wasp including the delusion of the male by the Drakaea or Hammer Orchid with the pseudocopulation resulting in the fertilization of the orchid and presumably the frustration of the wasp. The Japanese film crew came to film this event in the Stirling Ranges a few years ago. That season they were disappointed to find the Drakaea not yet in bloom. They were sent further west where these orchids were blooming well. Unfortunately it was still too cold for the Thynnid wasp to be active. Not to be deterred the crew lifted a patch of orchids complete with soil and flew it north for warmer weather and active males. This worked well. Reportedly the whole lot was returned and resettled into its original location with no ill effects. I wondered was this the same video we saw, a part of, at King's Park? We moved more quickly now on the homeward stretch. Only a short walk was taken in the Porongurup Ranges where abseilers plummeted off the sheer top of

Castle Rock. The few orchids sighted were familiar ones. Tucked amongst the shrubs along shady portions of the track were the largest Cryptostylis leaves I had yet seen! Tree Hovea and another purple pea flower were stealing the show.

Next stop was at Shed Beach on Point Riche. We tucked our Jayco caravan in under the trees just sheltered slightly, but still with a sea view. Most of the orchids were finished and we were told it had been a poor year. However the "floral walk" up Mt. Melville yielded beautiful views. We completed the walk and returned to the caravan as clouds were gathering. Before we sat down to tea, a brisk breeze had become a howling gale sandblasting all in its way. The caravan rocked a bit but fortuitously we had picked a spot that offered protection from the worst of the wind. By now we expected that we wouldn't be adding any new species to our trip list. We decided on a brief stop at Fitzgerald River National Park to check things out for a future visit in a wetter year. Quaalup Homestead provided a pleasant campsite and although we were still dodging squalls, we enjoyed several short walks. I was intrigued by the gradation of colour of the Large Waxflower *Chamelaucium megalopetalum* from waxy white to the deepest carmine.

Near here, rising above the saw-toothed leaves of prostrate Banksia we were surprised by our last significant orchid discovery for the trip, the Slipper Orchid, *Cryptostylis ovata.* What a treat to finally see this summer orchid that has its column adhered beneath the labellum! The pollination by the Ichneumon Wasp *Lissopimpla semipunctata* is described in the Hoffman and Brown. Clearly summer was on its way. Unfortunately the weather wasn't warm enough to stir the wasp's sexual urges this day and unlike the Japanese film crew we didn't have the resources to fly it north. Our next stop was Esperance. We had been warned about the beauty of the beaches here when we overheard a lady in a caravan park, "You got to see Esperance! It's so beautiful. It'll take the breath right out of ya!"

She was right, Esperance and the area is beautiful. It also lives up to a reputation, it good humouredly acknowledges, with its Festival of the Winds on 31st October. On this occasion the winds blew so hard the festival activities had to be cancelled. We experienced these winds on the granite slopes near Hellfire Bay. But that's another story. In all we spent fifty days searching for orchids from 7th September through to the 31st November and I've recorded seventy eight species in that time. For me it was an exciting trip with a lot of "good finds" despite the drought. In fact the amount of time spent in squalls and storms would have made me doubt the drought, were it not for the devastated appearance a few kilometres inland, at places such as Ravensthorpe. My lasting impression is of friendly and helpful Western Australians and of a beautiful land, full of vulnerable floral and faunal treasures. These treasures have lasted through nature's drought, floods and winds. Will they survive the continued onslaught of humanity?

I hope to return again, perhaps in a wet year when the inland is more inviting. I am aware that taxonomy has marched on beyond the Hoffman and Brown I used for identification. For me, learning is what it is all about so I'm happy to receive any corrections on plant names and any additional information.

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Orchids of South-West Australia, Revised second edition with supplement by Noel Hoffman & Andrew Brown.
Wildflowers of Southern Western Australia, by Margaret G. Corrick and Bruce A. Fuhrer.
Orchids of the West, by Rica Erickson. 3rd edition.

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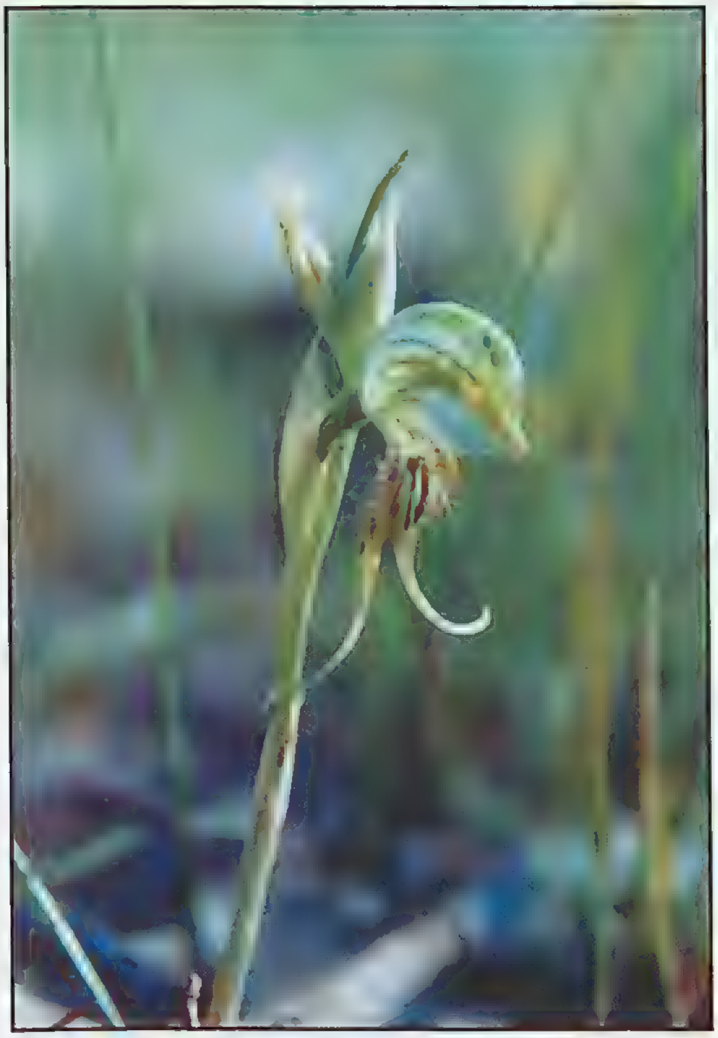
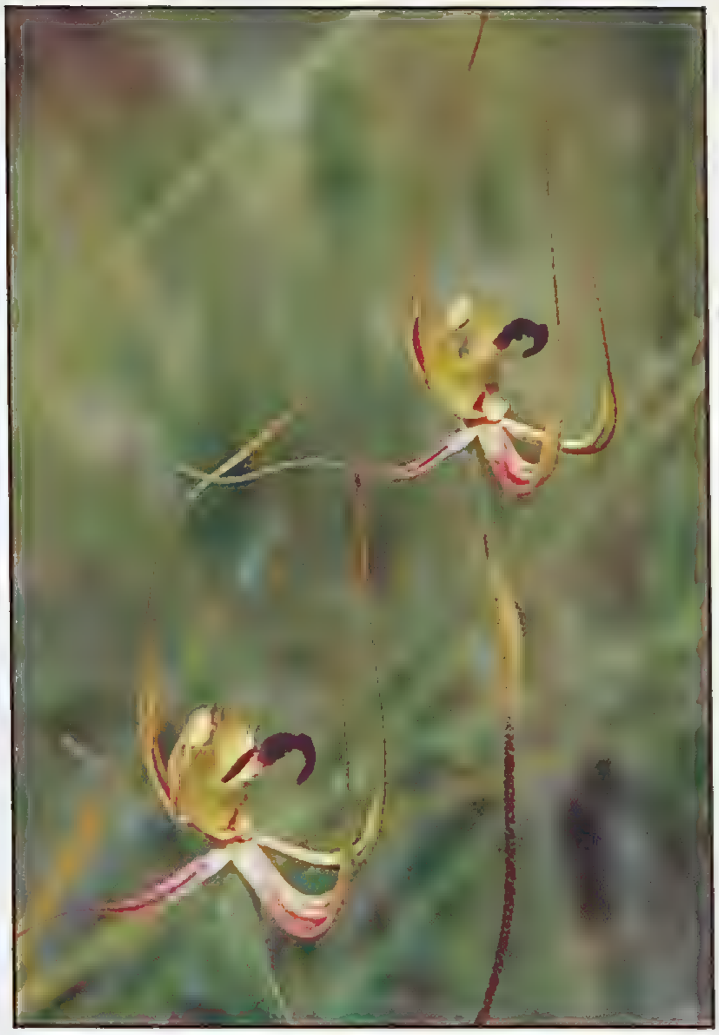
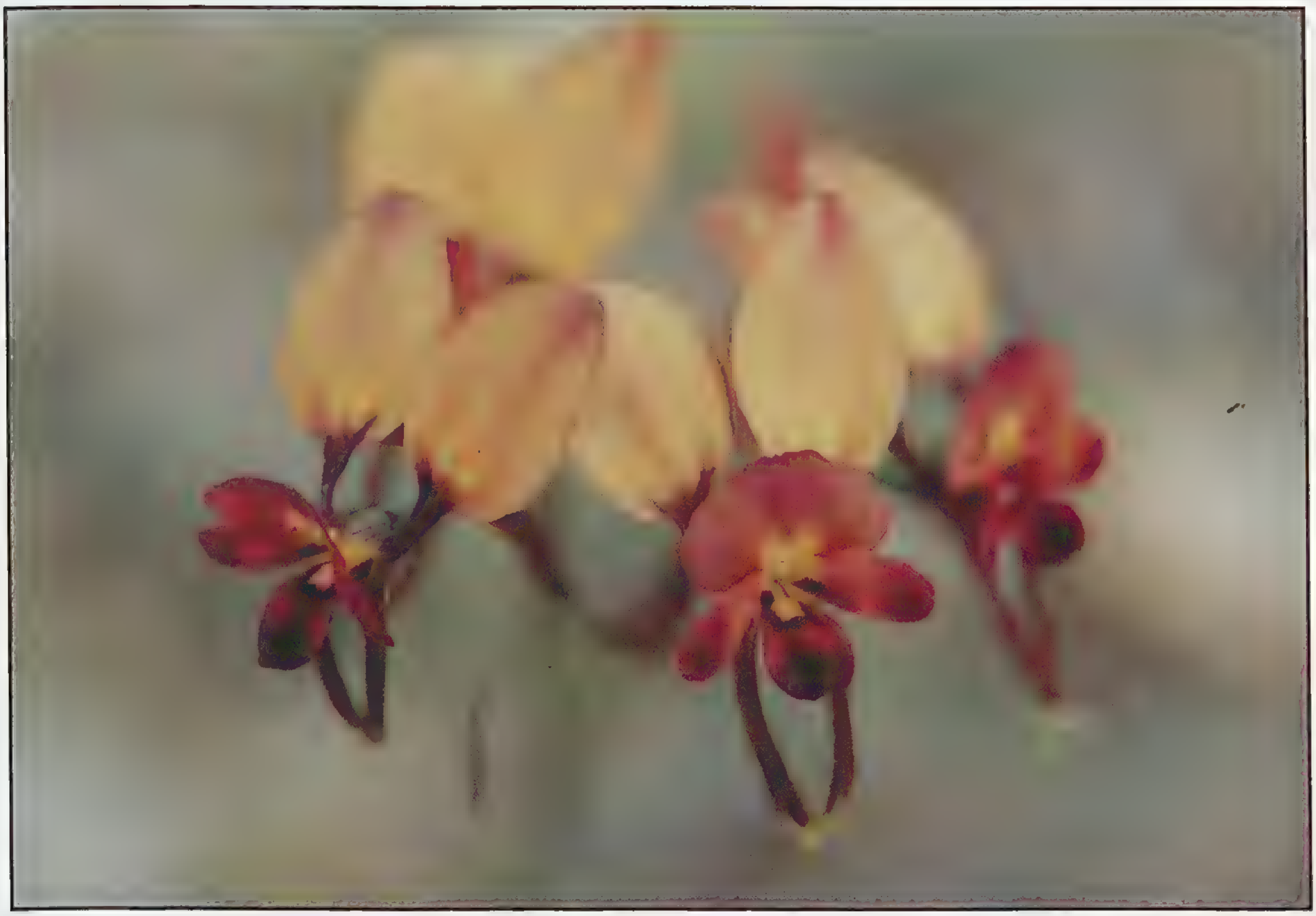


Pterostylis ciliata



Caladenia attingens



Diuris amplissima

Photos Linda Rogan

A rare new species of *Prasophyllum* (Orchidaceae) from Victoria

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Abstract

Prasophyllum hygrophilum, known from three localities in Victoria, is described as new. Although with a population of about 1000 plants the majority occur at a single locality and the species is considered to be vulnerable.

Key Words

Orchidaceae, *Prasophyllum hygrophilum*, vulnerable, new species, Australian flora, Victoria.

Introduction

Continuing studies into *Prasophyllum* (see Jones 2000, Rouse 2002) have revealed the presence of a number of undescribed species in Victoria and New South Wales. A distinctive species which grows in a unique habitat is here described as new.

Materials and Methods

Descriptions of taxa were made from fresh specimens. Dried specimens of *Prasophyllum* were examined from the following herbaria: CANB, CBG, HO and MEL. Unless otherwise indicated, all types of *Prasophyllum* species relevant to this study (or photographs thereof) and collections cited have been seen.

Taxonomy

Prasophyllum hygrophilum D.L.Jones and D.Rouse, sp. nov. affinis *P. campestri* R.Bates & D.L.Jones sed florenti posteriore; habitu validiore; floribus grandioribus et coloratioribus; labello lamino latiore; et labello callo crassiore, differt; quoque affinis *P. diversifloro* Nicholls sed floribus grandioribus et labello medilobo longiore, differt.

Typus: Australia. Victoria: Reedy Lake, near Nagambie, 13 Nov. 2000, D.L.Jones 17653 & K.J.FitzGerald (holo CANB, iso AD, BRI, K, MEL, NSW).

Illustrations: Page 233, Backhouse & Jeanes (1995) - as *P. campestre*; plates A-D, page 210, Jeanes & Backhouse (2000) - as *P.* species Nagambie; back cover, *Orchadian* 13(4) (photo D.P.Banks) - as *P.* sp. aff *campestre*; plates 42a-c, Rouse (2002) - as *P.* sp. aff. *pyriforme*.

Tuberous terrestrial herb growing as scattered individuals. *Tubers* not seen. *Leaf* erect, 25-38 cm long, 3-6 mm wide, terete, dark green, base 3-5 mm diam., whitish; free lamina erect, 12-20 cm long, withered towards the apex at anthesis. *Inflorescence* a sparse to moderately dense spike 8-15 cm long. Floral bracts transversely ovate, 2.5-3 mm long, 2-2.5 mm wide, closely embracing the ovary, apex bluntly apiculate. Ovaries at about 45° to the rachis, obovoid, 4-5 mm long, c. 3 mm wide, pale green. *Flowers* sessile, 12 - c.30, 10-14 mm across, green to greenish brown with pink or mauve markings and suffusions and with a white to pink labellum, strongly fragrant. *Dorsal sepal* deflexed, ovate-lanceolate, 8-10.5 mm long, 3-4.5 mm wide, shallowly concave to flat, often recurved distally, with 3 indistinct darker veins; apex acuminate. *Lateral sepals* free, obliquely erect, widely divergent, linear-lanceolate, 9-12 mm long, 2-2.6 mm wide, shallowly recurved distally, base not gibbous, distal margins involute, apex usually bidentate. *Petals* widely spreading, linear to narrowly linear-lanceolate, 7-10 mm long, 1.6-2 mm wide, entire, greenish to pink with a darker central band; apex subobtuse to subacute. *Labellum* sessile, porrect to obliquely erect in the proximal half, recurved at 90° or more just above the middle, distal half erect, the tip not protruding through the lateral sepals; lamina broadly ovate-lanceolate, 7-9 mm long, 5-6 mm wide, base not gibbous, proximal margins widely, flared, entire to slightly irregular, tapered from just below the middle to the apex, distal margins slightly undulate-crispate, apex bluntly apiculate. *Callus* broadly elliptic, extending three-quarters of the distance to the labellum apex, fleshy, c. 6 mm long, c. 3.8 mm wide, green to dark green proximally, rest yellowish, shiny, shallowly channelled, tapered to a short, blunt, raised and tail-like apex. *Column* porrect from the end of the ovary, c. 3.2 mm long, c. 3 mm wide; appendages obovate, c. 3 mm long, c. 1.2 mm wide, straight, apex truncate to shallowly emarginate, longer than the stigmatic plate. *Anther* ovate, c. 2 mm long, c. 1.3 mm wide, green to brown. *Pollinarium* c. 2.6 mm long; viscidium ovate, c. 0.3 mm long; hamulus narrowly ligulate, c. 0.8 mm long; pollinia c. 2 mm long, yellow, sectile. *Stigma* quadrate, c. 1.5 mm long, c. 2 mm wide, the rostellum shorter than the appendages. *Capsules* not seen. **Fig. 1.**

Distribution and Ecology

This species is restricted to northern Victoria with the largest population occurring around the margins of Reedy Lake near Nagambie. Another small population occurs on private land near Eppalock east of Bendigo and the species is also reputed to grow on the golf course at Murchison (G.Backhouse in Rouse 2002). The habitat at Reedy Lake is woodland dominated by river red gum (*Eucalyptus camaldulensis*) with a sparse grassy understorey. The soil is a shallow grey clay loam over heavy clay. The ground surface is markedly crabholey and the depressions fill readily with water following heavy rains. In bounteous seasons large areas of this habitat become completely flooded. The orchid grows in and around the depressions and the plants can have their basal parts immersed in water which can be up to 30 cm deep. Altitude: c. 120 - 220 m. Flowering period: November and December.

Recognition

Morphologically this species can be recognised by its robust habit, moderately large (10-14 mm diam.), green to greenish brown flowers with pink to mauve markings and suffusions, a voluminous white to pink labellum sharply recurved at right angles near the middle with the distal margins undulate-crispate and with a prominent, fleshy, green to yellowish-green, shallowly channelled callus which ends well before the labellum apex.

Notes

Herbarium material of this new species was incorrectly identified by the senior author as *P. campestre* in the early 1990's (see also Backhouse & Jeanes 1995) but the two species are very distinct. *Prasophyllum campestre* is much less robust with smaller, paler flowers and a narrow labellum lamina in which the margins are not undulate-crispate. The two species grow in vastly different habitats with *P. campestre* occurring in box-ironbark and *Callitris* woodland in well-drained sands and sandy loam, contrasting markedly with the heavy, wet soils in swampy red gum woodland occupied by plants of *P. hygrophilum*. The new species was probably once more widely distributed in northern Victoria but the vast majority of its habitat, red gum woodland, has been subjected to grazing for more than 150 years and in more recent times large tracts have been sown with exotic pasture species. The flowers of the *P. hygrophilum* have a strong scent which can become sickly and overpowering on hot days.

Conservation Status

The largest population, which consists of about 1000 plants, is reserved in a Water Reserve but the security of tenure of the orchid at this site is uncertain; suggest 2V?c by the criteria of Briggs & Leigh (1996).

Etymology

Derived from the Greek *hygrophilum,* water-loving, in reference to the very wet habitat where this species grows.

Other Specimens examined

VICTORIA: near Eppalock, E of Longlea State Forest, 14 Nov. 1995, *Foreman 300, Hadden & Orr* (MEL 2027375); NE corner of Reedy Lake, 28 Nov. 1992, *Jeanes 37, Eichler & Rouse* (MEL 2014432); W side of Reedy Lake, 17 Nov. 2000, *Jones 17710 & FitzGerald* (AD, BRI, CANB, HO, MEL, NSW); SE corner of Reedy Lake, 16 Nov. 1991, *Rouse* (MEL 2154965); Nagambie, no date or collector (MEL 2021218).

Acknowledgements

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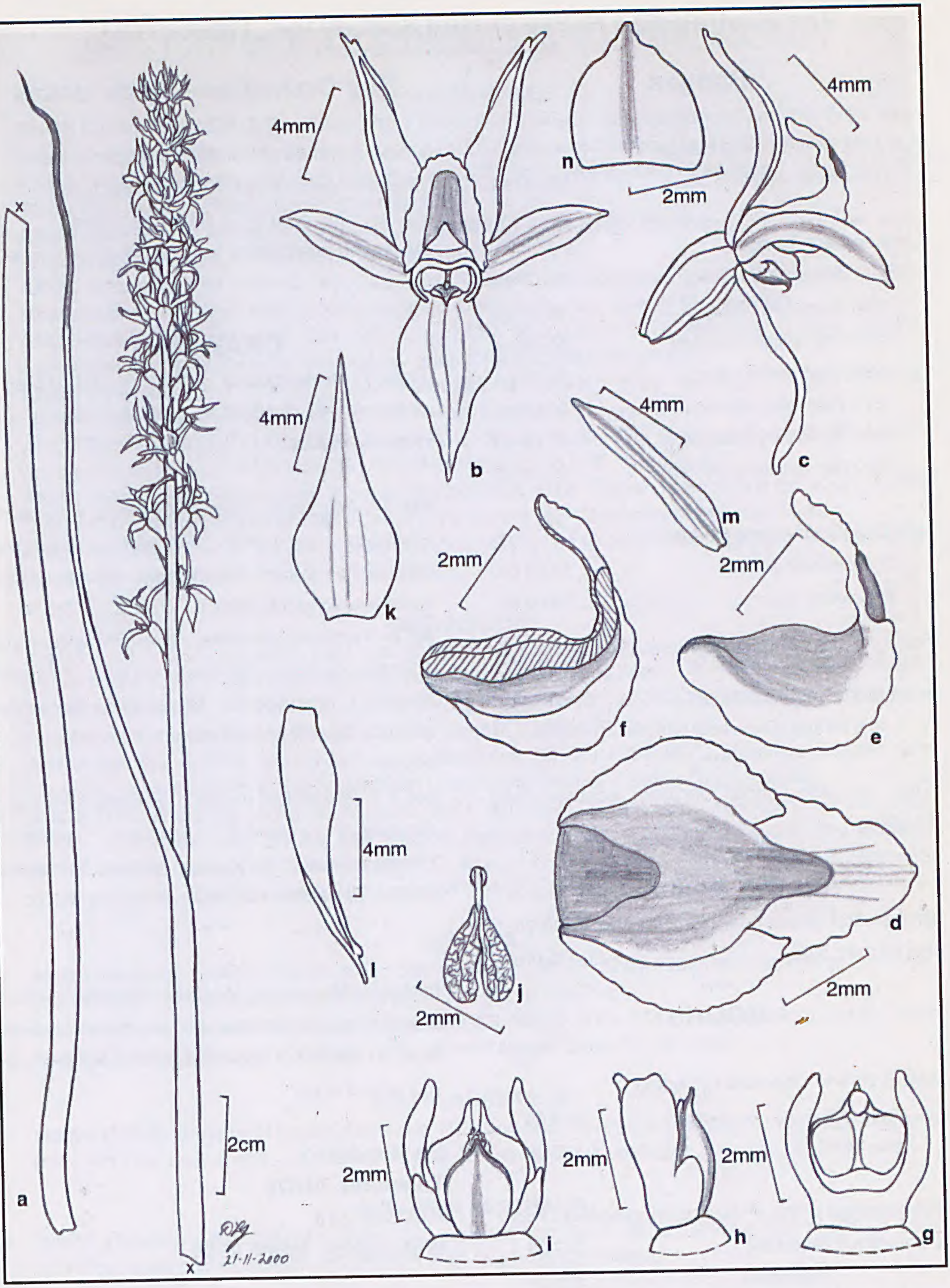

Caption: Fig. 1. *Prasophyllum hygrophilum*, Reedy Lake, near Nagambie, D.L.Jones 17653 & K.J.FitzGerald (drawn from the type collection). a. flowering plant; b. flower from front; c. flower from side; d. labellum from above, flattened out; e. labellum from side; f. longitudinal section of labellum; g. column from front; h. column from side; i. column from rear; j. pollinarium; k. dorsal sepal; l. lateral sepal; m. petal; n. fertile bract.

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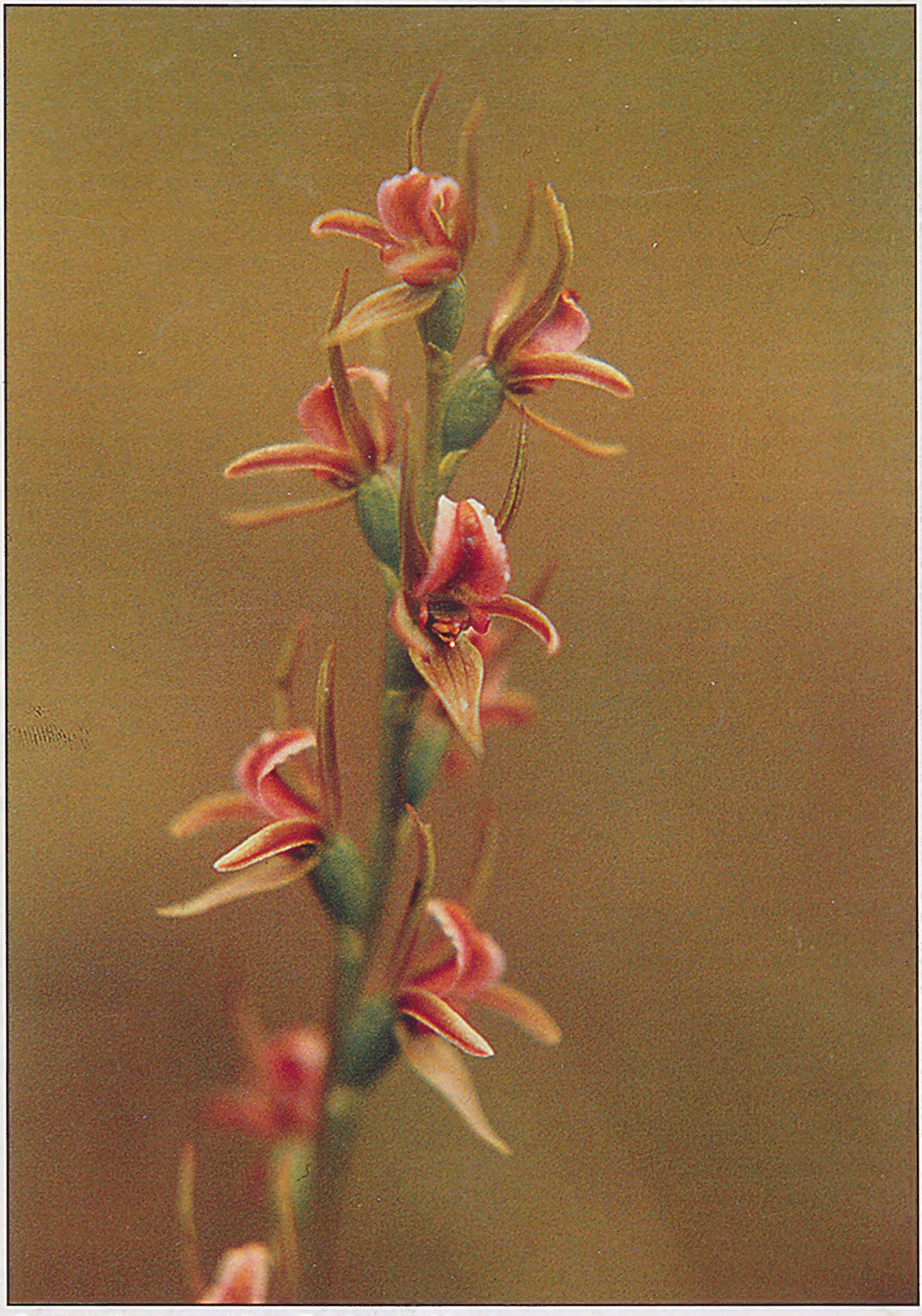

Prasophyllum hygrophilum, Reedy Lake, Victoria
Photo Dean Rouse